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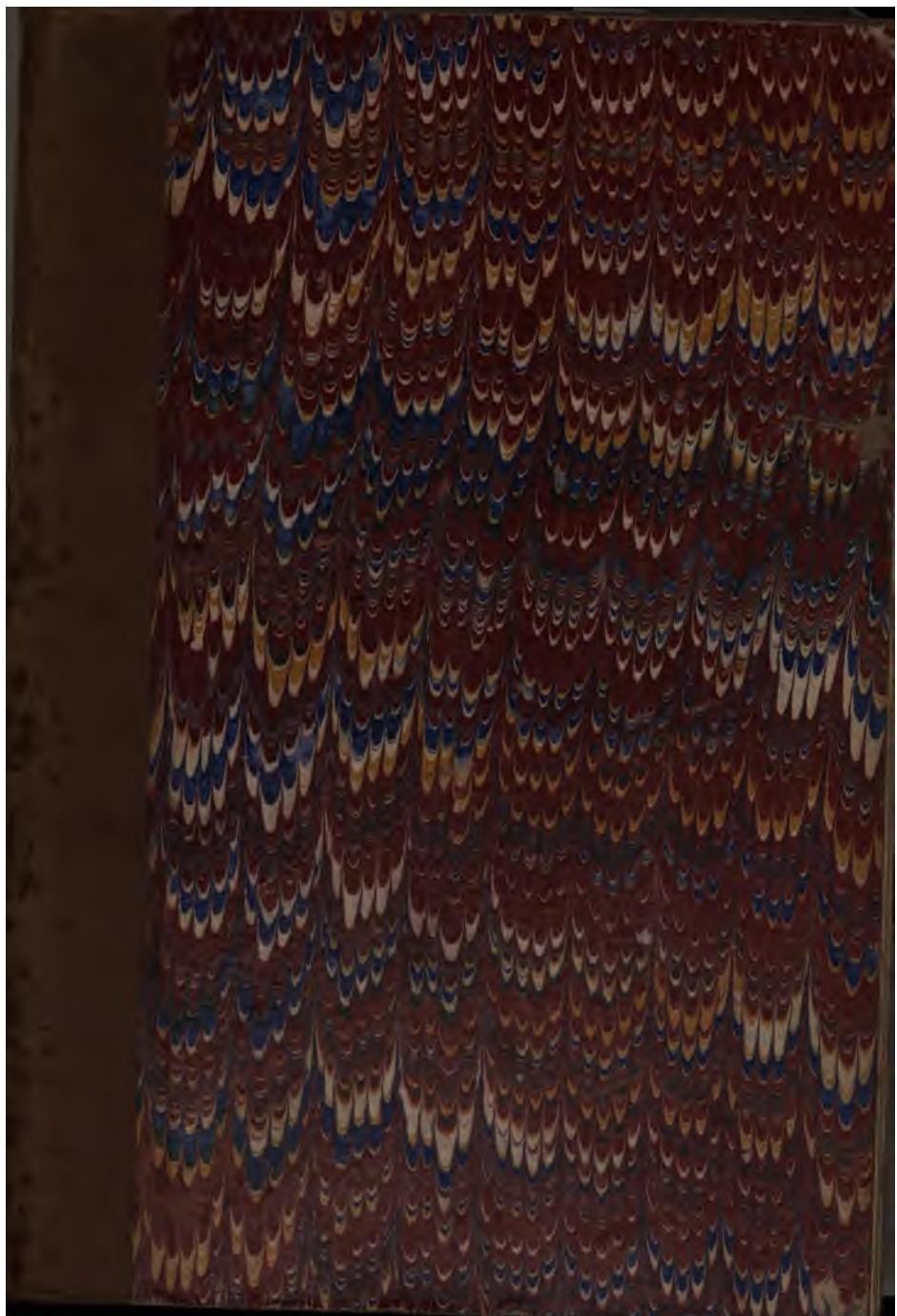
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PATENTS FOR INVENTIONS.

A BRIDGMENTS

OF

Specifications

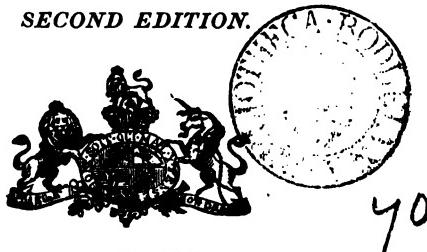
RELATING TO

SEWING AND EMBROIDERING.

A.D. 1755-1866.

PRINTED BY ORDER OF THE COMMISSIONERS OF PATENTS.

SECOND EDITION.



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P R E F A C E.

THE Indexes to Patents are now so numerous and costly as to render their purchase inconvenient to a large number of inventors and others, to whom they have become indispensable.

To obviate this difficulty, short abstracts or abridgments of the Specifications of Patents under each head of invention have been prepared for publication separately, and so arranged as to form at once a Chronological, Alphabetical, Subject-matter, and Reference Index to the class to which they relate. As these publications do not supersede the necessity for consulting the Specifications, the prices at which the printed copies of the latter are sold have been added.

The number of Specifications from the earliest period to the end of the year 1866 amounts to 59,222. A large proportion of the Specifications enrolled under the old law, previous to 1852, embrace several distinct inventions, and many of those filed under the new law of 1852 indicate various applications of the single invention to which the Patent is limited. Considering, therefore, the large number of inventions and applications of inventions to be separately dealt with, it cannot be doubted that several properly belonging to the group which forms the subject of this volume have been overlooked. In the progress of the whole work such omissions as may from time to time become apparent, will be supplied in future editions.

This volume contains Abridgments of Specifications to the end of the year 1866. From that date the Abridgments have

not been published in classes, but will be found in chronological order in the "Chronological and Descriptive Index" (*see* List of Works at the end of this book). It is intended, however, to publish these Abridgments in classes as soon as the Abridgments of all the Specifications from the earliest period to the end of 1866 have appeared in a classified form. Until that takes place, the reader (by the aid of the Subject-matter Index for each year) can continue his examination of the Abridgments relating to the subject of his search in the Chronological and Descriptive Index.

This series includes the inventions relating to sewing and embroidering by hand or by machinery. New or improved forms of needles are included, but for the manufacture of needles the reader is referred to a separate series entitled "Needles and Pins." Inventions relating to needle cases, thimbles, and what are known as "ladies' companions," are embodied in this series with the view of rendering it complete. Certain novel fabrics are also described, as well as improved methods of manufacturing others, some process of sewing or embroidering being, in each case, associated with them. The inventions relating to embroidering are not restricted to those in which a needle or some process of sewing is used, any methods of producing similar embroidery, whether by weaving or otherwise, being comprehended. The preparation of canvas patterns, and also of imitation embroidery, forms a branch of this series.

The Abridgments marked thus (*) in the following pages were prepared for another series or class, and have been transferred therefrom to this volume.

B. WOODCROFT.

November, 1871.

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INTRODUCTION.

UNLIKE the histories of almost all the most important inventions which, originating years ago, have been handed down to us improved and perfected by our predecessors, the story of the introduction of the needle into this country is scanty in the extreme. We know little or nothing about the size, shape, or method of manufacture, indeed all the information we possess is in the form of disjointed fragments of almost legendary history scattered here and there in the pages of sundry encyclopedias and works of reference.

In his quaint old history of London and its trades, Stow tells us that needles were not sold in Cheapside until the reign of Queen Mary, and that they were at that time made by a Spanish negro who refused to discover the secret of his art. Another authority* says that "needles were first made in England by a "native of India in 1545, but the art was lost at his death." Whether the "Spanish negro" of Stow and the "native of "India" mentioned by the other authority are one and the same individual cannot now perhaps be determined, though, from the approximation of the dates, it seems more than probable.

We may be quite sure that the needle had been introduced into England prior to 1553, for during her confinement at Woodstock in that year the Lady Elizabeth—the Germans had not introduced their "Princess" then—spent many a weary hour in covering the binding of a favourite book with devices in needlework. The volume in question, which is a black-letter edition of the epistles of St. Paul, is preserved in the Bodleian library at Oxford, and from the delicacy of the embroidery it is clear that the work could only have been performed by some improvement on the comparatively ruder instrument which must have served the

* Wilkes's "London Encyclopedia."

royal lady's ancestors. Taylor * in his poem in praise of the needle, thus alludes to the captive at Woodstock and her employment :—

“ . . . When she a maid had many troubles past
 “ From gaol to gaol by Marie's angry spleen,
 “ And Woodstock and the Tower in prison fast,
 “ And after all was England's peerless queen ;
 “ Yet howsoever sorrow came or went,
 “ She made the needle her companion still,
 “ And in that exercise her time she spent,
 “ As many living yet do know her skill.
 “ Thus she was still, a captive or else crowned,
 “ A needle-woman royal and renowned.”

Her father's last wife, Katherine Parr, looked upon the needle in a very different light. She, poor woman ! had her head turned in her youth by the curiously correct prognostic of some one skilled in astrology. He, casting her nativity, said that she was born to sit in the highest seat of imperial majesty, having all the eminent stars and planets in her house. It was not an unusual prophecy to make about any one in those days of credulity and superstition, but the young daughter of the brave guardian of the northern border heard it, and took such notice of it, that when her mother used sometimes to call her to work she would reply,—“ My hands are ordained to touch crowns and sceptres, “ and not spindles and needles.”† Yet after all, in later years Katherine quite overcame her repugnance to touch a needle, and more, her skill in its use became remarkable. “ There are “ specimens of her embroidery at Sizergh Castle which could “ scarcely have been surpassed by the far-famed stitcheries of the “ sisters of King Athelstan.”‡

Whether the art of manufacturing needles was really lost at the death of the “ native of India ” or no, it seems to be quite clear that no extensive centre of operation had been established till 1650. In that year Mr. Damer, an ancestor of the Milton family — the title became extinct in 1808 — settled at Long Crendon in Buckinghamshire, Christopher Greening and his three children, Elizabeth, John, and Thomas. This little family,

* This was John Taylor “ the water poet.”

† Strype's *Mems.*, vol. ii., pt. 1, p. 206.

‡ Miss Strickland's “ *Lives of the Queens of England.*”

doubtless assisted by the benevolence of their patron, set up a small needle factory which, if it do not exist at the present day, certainly was carried on up to a recent period. Now Worcestershire is the favoured *locale* of needle manufacturers, but even here it is not at all clear when Redditch became the centre of the trade. There are slight indications, it is said, of Redditch needle making for a period of nearly two centuries, but beyond that all is blank. There are no particular advantages offered by the situation other than that, common to many other spots, of being near to the seat of the iron trade. "In short there seems to be no other mode of accounting for the settlement of the needle manufacture in this locality other than that which may be urged in reference to watch-making in Clerkenwell or coach-making in Long Acre. A needle-maker, we will suppose—say two centuries ago—settled at Redditch, and gradually accumulated round him a body of workmen. A supply of skilled labour having been thus secured, another person set up in the same line, perhaps enticing away some of the men from his predecessor. In time the workmen's children learned the occupation carried on by their parents, and thus furnished an increased supply of labour, which in its turn led to the establishment of other manufacturing firms."* It may here be well to state that it is foreign to the subject of this volume to enter into any particulars concerning the *methods of manufacture* of needles; they already form portion of another series of "abridgments."

The verb "to embroider" signifies properly to surround with an edge or border,† but more generally to adorn with figures of needlework. Rees, in his encyclopedia‡ published in 1819, says that the word is derived "from the French *broiderie*, of *broider* to embroider; which some deduce, by transposition, from *broideur*, because they formerly embroidered only the borders of stuffs, whence the Latins also call embroiderers *limbularii*. Du-Cange observes, that they anciently wrote *aurobrustus* for embroidered with gold, or *brustus brudatus* and *brodatus*; whence *broderie*." The same reference further says, "The invention of embroidery is attributed to the Phrygians; whence the Latins call embroidered garments *vestes Phrygioniae*; and embroiderers

* "Penny Magazine," 1843. New Series.

† Encycl. Britannica.

‡ Volume xiii.

“ *Phrygiones*. In the ‘ Menæchmi ’ of Plautus, (Act ii., scene 3,) “ a young woman, desirous of sending her mantle to be em- “ broidered, says, ‘ *Pallam illam ad Phrygionem ut deferas, ut* “ *reconcinnatur atque ut opera addantur, quæ volo* ’.”

Long before the Trojan war the Sidonian women had acquired a wide spreading celebrity for their skill in the art. The Greeks ascribed the invention of embroidery to Pallas, but it is extremely probable that they derived their knowledge of it from the Phrygians. The Grecian women attained to such a degree of skill in the art that their performances were said to rival the finest paintings.* Virgil indirectly testifies to this speciality of theirs when he describes Æneas sending to Dido, as a present, the embroidered mantle which Helen brought to Troy.†

The book of Exodus also tells us that Aholiab was “ an em- “ broiderer in blue, and in purple, and in scarlet, and fine “ linen.”

Lastly, we notice how, as time passed on, the art of embroidery began to be looked upon as an occupation worthy to fill much of the time of ladies of rank. Katherine Parr, to whose skill in the use of the needle we have already alluded, was no exception to the rule, though she may possibly have been more than usually proficient, judging from the specimens of her work preserved at Sizergh Castle. “ The material on which both counterpane and “ toilette-cover are worked is the richest satin, of a fabric with “ which the production of no modern loom can vie. The centre “ of the pattern is a medallion, surrounded with a wreath of “ natural flowers, wrought in twisted silk and bullion. A spread “ eagle, in bold relief, gorged with the imperial crown, forms the “ middle. At each corner is a lively heraldic monster of the “ dragon class, glowing with purple, crimson, and gold. The “ field is gaily beset with large flowers in gorgeous colours, highly “ embossed and enriched with threads of gold. The toilette is “ *en suite*, but of a smaller pattern. The lapse of three centuries “ has scarcely diminished the brilliancy of the colours, or tarnished “ the bullion; nor is the purity of the satin sullied, though both “ these queenly relics have been used, on state occasions, by the

* Encycl. Brit.

† _____ “ *Pallam signis suoque rigentem,*
“ *Et circumtextum croceo velamen acantho,*
“ *Ornatus Argive Helense*.”—Æn. Lib. 1, 848 et seq.

" family,* in whose possession they have remained as precious heirlooms and memorials of the ancient connexion with Queen Katherine Parr."†

" There are diverse kinds of embroidery; as *embroidery on both sides*, that which appears on both sides. *Guimped embroidery*, performed either in gold or silver. In this work a sketch is first made on the cloth, then they put on a cut vellum, and afterwards sew on the gold and silver with silk thread, interpressing silver and gold cord, tinsel, and spangles. *Embroidery on the stamp*, where the figures are very high and prominent, being supported on wool, cotton, hair, &c. *Low and plain embroidery*, where the figures are low and flat, and without any enrichment between them. It is probable that the covering of the sword of Goliath, which was laid up in the tabernacle as a consecrated memorial of the victory gained by David over that vainglorious idolator, or the wrapper that enveloped it, was some beautiful piece of embroidered work. (1 Sam. xxi., 9.) By statute 22 Geo. II. c. 36, no foreign embroidery, or gold or silver brocade, shall be imported, upon pain of being forfeited and burnt, and penalty of 100l. for each piece. No person shall sell or expose to sale any foreign embroidery, gold or silver thread, fringe, brocade, or make up the same into any garment, upon pain of having it forfeited and burnt, and penalty of 100l. All such embroidery &c. found may be seized and burnt, and the mercer, &c. in whose custody it was found, shall forfeit 100l."‡

This Act was repealed by 6 Geo. IV. c. 105,§ but the above passage only serves to show how important the art was considered to be, and how stringent were the measures necessary for its protection.

Improvements in mechanical science and appliances naturally resulted in the invention of machines for saving labour, and so, by degrees, it was found that embroidery could be produced equally well by machinery as by hand. It is scarcely necessary to enter into any description of such machinery in this place, suffice it to say that most of the modern machines embody the chief features of Heilmann's patent, No. 5788, A.D. 1829, of which more hereafter.

* The Stricklands.

† Strickland's "Lives of the Queens of England."

‡ *Rees' Ency.*, 1819.

§ "An Act to repeal the several Laws relating to the Customs," 5 July, 1825.

" The first attempts which were made to accomplish needlework by means of machines were confined, as might be expected, to an exact imitation of sewing by hand. The process of gathering, especially in the manufacture of calico, was of sufficient importance to induce attempts at the construction of machinery to supersede manual labour. For this purpose an apparatus was for a long time in use, by which the calico in its passage between two fluted rollers was so folded as to allow of needles, which were fixed at various points of the extreme circumference of the rollers, penetrating several folds of the material at once.* This arrangement underwent many modifications, and remained in use till its final displacement by the modern sewing machine. The introduction of the needle with two points, and the eye in the centre, occurred in 1755, and was primarily intended to dispense with the continual inversion of the needle in sewing by hand. It was, however, soon employed in the construction of machines which were intended to imitate hand sewing, and nearly all machines which were constructed with this view, were on the principle of a double-pointed needle. The end of the thread was usually fastened to the eye in the centre, and the needle in its passage through the cloth was alternately drawn backwards and forwards by means of two grippers; the one above releasing its hold of the needle on the latter being caught by the gripper below. It was on this principle that the embroidery machine of Heilmann was constructed, which created so great a sensation at the time of its introduction, and in which several double-pointed needles were simultaneously in motion."†

This description of machine has not, however, found much favour, and, in fact, all machines in which hand stitching is copied are more or less unsuccessful. " In sewing by hand, the thread cannot be used of a greater length than the distance the hand can be stretched from the material to be sewn. The length of thread must always remain very limited, and the consequent frequent interruption in the work causes both delay and hindrance. This disadvantage has, in machines imitating hand sewing, up to the present, not been removed, and should even this imperfection be surmounted, two still greater diffi-

reader will find that Leonard Bostwick's specification, No. 10,134, describes apparatus somewhat of this description.
"translation of Dr. Herzberg's work on "the Sewing Machine," 1864.

" culties would present themselves, as the thread becomes much worn from its constant passage through the material, and each stitch requires much time in its formation."*

In reality, the only three stitches which hitherto have met with extensive practical application are the simple chain stitch,† formed by a single thread, the "Grover and Baker stitch," or double-thread chain stitch, and the quilting stitch, or lock-stitch, in which the entire length of the lower thread passes through the loops of the upper thread formed by the descent and ascent of the needle.

The celebrated "Elias Howe, junior," who may justly be taken as a fair type of the indomitable energy and perseverance of our American brethren, is generally considered to have been the first inventor of the sewing machine, in its really practical form; but if we examine the question more closely we shall find that the opinion is not altogether correct, for although the two inventors were contemporary—widely differing were their endings!—the Frenchman Thimonnier may justly take precedence of Howe the American.

Thimonnier, the son of a dyer of Lyons, was born at Abreste in the year 1793. Of his childhood we know nothing, but by-and-bye we hear of him working—when he could get employment—as a tailor at St. Etienne. This was in 1825, and it was probably then that the passion for inventing seized upon him, for we find that in the few following years he was thought by his neighbours to be labouring under hallucinations; his work fell off by degrees, and what little he had was neglected. It was customary then in France, as it is now in England, to give out large quantities of work to sempstresses residing round about the centre of employment. This seems to have given the first impetus to Thimonnier's inventive powers, or at all events to have turned his mind into the new channel of thought. He conceived his idea of a sewing machine and passed four years in its construction, spending thereby much time and precious money. In 1830 he obtained his Letters Patent.‡

* Extract from Dr. Hersberg's work.

† Thimonnier's machine worked this stitch.

‡ 17 July 1830.—Thimonnier and Ferrand of St. Etienne, Loire.

There were also other patents as follow:—10 June 1845.—"Thimonnier, tailleur grande côte. No. 22 à Lyon." 21 July 1845.—"Thimonnier, mécanicien à Amplepuis (Rhône), an improvement on that taken out in June. 5 August 1846.—"Thimonnier and Magnin, demeurant le premier à Amplepuis, et le second à Villefranche (Rhône)."

Illustrations of the machines patented on the 21 July 1845 and 5 August 1846, as well as other references, may be seen in the Journals of the French Patent Office in our Patent Office Library in London.

INTRODUCTION.

Like Howe, he was not destined unaided to bring his cherished work to perfection. A Government engineer, Beaunier by name, living at St. Etienne at the time, had an opportunity of examining the machine. He came, saw, and appreciated. Through his efforts and influence the firm of "Ferrand, Thimonnier, Germain, Petit & Cie." was established with a view to the profitable working of the patent. Now came the time when the sun of the poor St. Etienne tailor was at its brightest. In 1841, eighty wooden machines might have been seen in the Rue de Sèvres very busy upon clothing for the army; but that same year a band of ignorant and furious men, jealous of the success of the new implement, smashed the company's machines and nearly put an end to the poor tailor himself.

Beaunier soon after died, and the company, missing the guiding hand, languished, drooped and died out altogether, leaving Thimonnier—poor man—to begin the world anew.

Returning to Paris, he tried to gain a living by taking in sewing. He failed again; and on his way back to his native home earned many a dinner and many a night's lodging by exhibiting as a curiosity the machine which he carried with him on his back. Still, nothing daunted, he went to work again and constructed several new machines, which he sold without difficulty.

Another friend, M. Magnin, of Villefranche, joined our inventor at this crisis, and it was through him that a patent * was obtained in this country. In 1848 the woodwork had been replaced by metal, and the rate of sewing was vastly better. The revolution of '48 again, and for the last time, blighted his hopes and ruined both himself and partner. He sold his patent in this country, and sent a machine to Hyde Park in 1851, where it was not noticed. Finally, after a life of incessant adversity—a bitter war with poverty—he died, penniless, in 1857.

"In the year 1845, the date of Howe's patent in America, the French machine was already making two hundred stitches a minute."[†]

While the poor tailor was starving in Europe, Howe was busily employed in perfecting the machine by which he ultimately made a huge fortune, though not without much trouble by the way.

* No. 12,080, 1848.

† So says the "Scientific American": April 17, 1869.

He was born at Spencer, Massachusetts, on the 10th July 1819, at least so says Salomon in his biography.* "His parentage was " respectable, his father being in the station of life which would " be known in England as that of a small farmer and mill " owner." He was educated at the State school, and for a trade made choice of that of "machinist," to use the American word. Our informant tells us that even at the comparatively early age of 21, in 1840, the idea of an automatic sewing machine had already seized upon him. Some have thought to trace a resemblance between Howe's invention of the sewing machine and the origin of the stocking frame, inasmuch as that both were contrived by poor mechanics, striving to lessen the labour which they saw to be a real hardship upon their wives and other poor women. Salomon does not attempt, as far as we can see, to offer any suggestion of the cause which led Howe to ponder upon the subject of the sewing machine, but as the latter was a married man at the age of 22, with a wife and children depending on him for their lives, we may reasonably suppose the before-mentioned comparison not without basis. Early in December 1844, he was residing at Cambridgeport, Mass., and being straitened in circumstances, he, like Thimonnier, found a helper, in the person of Mr. George Fisher, the publisher of a weekly newspaper in that town. After all, if we except their terminations, there is a great similarity between the careers of Thimonnier and Howe. They form two melancholy chapters in the history of Invention.

Like the Frenchman, Howe was supposed to possess an exaggerated opinion of his own scheme, and Mr. Fisher was considered more than visionary in encouraging and assisting him. Nevertheless in 1845-6 the patent was granted and the first machine constructed and finished for practical operation. Salomon says that "to test the operating power and practical " utility of the invention, two suits of men's clothing, of fine " broadcloth, were made by the machine, that is to say, all the " seaming and stitching work was performed by it; one suit " being worn by Howe and the other by Mr. Fisher. The work " was perfectly well done, and so firm that it outlasted the " cloth. The stitches, known as the 'lock-stitch,' were made " at the rate of one hundred and sixty in thirty seconds, the

* "The History of the Sewing Machine," by N. Salomon, London, 1863.

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" average rate of hand-sewn stitches being about thirty in sixty " seconds."

Mr. Fisher had advanced a considerable sum in furthering the prospects of the machine, and Howe was moreover indebted to his father for an additional amount. To liquidate these claims he parted with the whole interest in his invention—as far as America was concerned—to them jointly. In 1846 he sold the exclusive right to the invention in England to Mr. William Thomas, of Cheapside, who took out the patent* in his own name. Howe was employed by Mr. Thomas to give him the benefit of his assistance in working the patent at a fixed salary of 3*l.* per week. It is not necessary to describe how he got into difficulties, was imprisoned for debt, and finally discharged from employment. He at last succeeded in returning with his family to America utterly destitute and broken down.

After his return to his native country, and aided by his brother in law, he spent successfully some years in prosecuting cases of infringement of his Patents. His prospects began to look brighter. In 1853 he obtained the power of granting licenses, but between that time and the 1st July 1854 fifteen licenses only had been issued. "In the five following years there were no " fewer than 46,023 granted, and up to September 1860 he had " issued 130,000; his fees on these licenses producing him a " net return of 441,132 dols. 3*lc.* He became sole owner of his " patent on the 1st October 1855, by purchase and satisfaction " of all outstanding rights, titles, and claims. In September 1860 " the Commissioner of Patents for the United States granted " him a renewal of his patent for a period of seven years, grace- " fully acknowledging the great benefit his invention had con- " fered on the country."†

We have thus sketched out in a shadowy way the histories of the two most prominent persons in the list of the early sewing-machine inventors; the reader and the following collection of abridgments must supply the rest.

* No. 11,464. A.D. 1846.

† Salomon, p. 66.

SEWING AND EMBROIDERING.

SEWING AND EMBROIDERING.

A.D. 1755, June 24.—N^o 701.

WEISENTHAL, CHARLES FREDERICK.—Working fine thread into muslin after the manner of Dresden needlework, by means of a needle with two points, one at the head and the other at the opposite end, as usual ; which needle is to be used by holding it with the fingers in the middle, so as not to require turning.

[Printed, price 4*d.* No Drawings. Notice in Rolls Chapel Reports, 6th Report, p. 128.]

A.D. 1770, March 22.—N^o 955.

ALSOP, ROBERT.—Weaving embroidered stuffs in a loom, with one, two, or more shuttles.

[Printed, 4*d.* No Drawings. See Rolls Chapel Reports, 6th Report, p. 137.]

A.D. 1804, May 30.—N^o 2769.

DUNCAN, JOHN.—Machinery for tambouring upon cloth, by which one person is enabled to work with a large number of barbed needles or hooks at the same time, instead of employing only one needle or hook, as when tambouring solely by manual labour. The barbed ends of all the needles pass simultaneously through the cloth ; then each needle is supplied with thread by a feeding needle, which passes the thread around the tambouring needle and under the barb thereof ; and when the tambouring needle recedes, it draws such thread in the form of a loop, through the loop last drawn by it through the cloth. These movements are repeated until the pattern is complete ; and when this is the case, the machinery is worked in a suitable manner to secure the ends of the threads. The pattern (which will consist of a number of similar figures) may be produced by moving the needles horizontally or vertically at the requisite times in front of the cloth, or by moving the cloth

in front of the needles or hooks. The latter plan is preferred by the patentee, and is effected as follows:—The cloth is stretched in a vertical position between two cylinders placed parallel to each other in an oblong frame, which slides freely up or down at pleasure, in another frame; and the latter slides freely to and fro horizontally, carrying the first frame with it. Thus, either a vertical or horizontal motion may be communicated to the cloth; and when both are communicated at the same time, the cloth moves in an oblique direction. By these means, every rectilinear or curvilinear figure may be produced, and, consequently, every pattern required.

[Printed, 5s. Drawings.]

A.D. 1807, February 20.—N° 3012.

WINTER, JAMES.—Apparatus to be used for sewing and pointing leather gloves, consisting of a pedestal supporting a pair of jaws, which receive the leather to be sewed or ornamented, together with an instrument termed an “index,” formed with grooves on the top or face to guide the needles. One jaw is capable of turning on a joint, and is kept closed by a spring during the operation of sewing; it is opened, when required, by placing the foot on a treadle connected by a cord with a pin projecting from such moveable jaw. The index may be made of ivory, bone, brass, or any other fit material, and consists of two pieces or sides, either straight or curved, according to the part of the glove to be sewed, and capable of adjustment with regard to each other, by means of a screw, so that the grooves on the top of the two sides may be made to correspond. In sewing, the needles are passed through the grooves in the index, which must be made of the depth required for the stitch,—the leather being placed even with face or top of the index. The grooves in the index may be varied, so that the different kinds of sewing and ornamental work may be performed with one, two, three, or four needles; and for single and double seaming, the index may be made without grooves on the face.

[Printed, 6d. Drawing. See *Repertory of Arts*, vol. 10 (*second series*), p. 388; and *Rolls Chapel Reports*, 7th Report, p. 108.]

A.D. 1821, December 19.—N° 4627.

WINTER, JAMES.—Improvements in the apparatus for sewing and pointing leather gloves described in the Specification of

Letters Patent, dated February 20, 1807, N° 3012. In this instance the jaws which hold the leather, instead of opening and closing by a circular movement upon a joint, are made to open and shut by a parallel horizontal movement, effected by a slider and screw. The "indexes" for guiding the needles are connected to the upper part of the jaws by screws passing through elongated holes, which render them capable of adjustment.

Two indexes of improved construction are also described.

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 4, p. 12.]

A.D. 1829, May 2.—N° 5788.

BOCK, HENRY, (*A communication from Josué Heilmann.*)—Machinery for embroidering or ornamenting fabrics by the use of a large number of needles formed with an eye in the centre and a point at each end; which needles are passed through the fabric from opposite sides alternately by means of pincers, nippers, or "finger pieces." In this machinery an arrangement of apparatus upon the principle of the pentagraph is employed for governing or changing the relative positions of the fabric and the needles, so as to give to the embroidery or ornament the form or figure desired; and it is likewise proposed to apply this apparatus to machines in which tambouring needles are used.

[Printed, 2s. 8d. Drawings. See London Journal (*Newton's*), vol. 9 (*second series*), p. 192; and Register of Arts and Sciences, vol. 4 (*new series*), p. 134.]

A.D. 1835, November 14.—N° 6931.

CROPPER, JAMES, and **MILNES, JOHN BROWN**.—(*A communication.*)—1. Machinery for embroidering lace, cloths, or other fabrics by means of needles having a point at each end and an eye in the centre; such needles being conducted through the fabric from opposite sides alternately by spring holders; and the position of the fabric being changed from time to time, in order to produce the required form of ornament, by apparatus acting upon the principle of the pentagraph.

2. Improvements in looms whereby the fabrics in course of weaving therein are at the same time embroidered by means of threads supplied from bobbin carriages, and which are laid on both the upper and under surfaces of the warp, and consequently form additional threads to those which are thrown between the warp threads by the crossing of the shuttle: the threads from the

bobbin carriages are laid in such manner as to present an appearance similar to that produced in embroidering with needles by passing ornamenting threads through the fabric.

[Printed, 2s. 4d. Drawings.]

A.D. 1836, May 3.—N^o 7079.

SNEATH, WILLIAM.—Application of mechanism to bobbin net machinery for the purpose of producing thread-work ornaments on the bobbin net or lace whilst it is being made by the ordinary parts of the bobbin net machinery; or such mechanism may be combined into and form a machine independent of and separate from the machinery by which the bobbin net or lace is produced. The instruments used for making each pattern or ornament are, a bent or curved needle, with two eyes, for introducing the ornamenting thread through the lace and leaving a loop thereof; a pair of barbed points or instruments, barbed at opposite sides, for carrying the loop over the place where the needle is next to pass through; and a bent hook, by which the ornamenting thread is tied into a knot at the completion of the pattern by dragging one loop through another.

[Printed, 4s. 2d. Drawings. See Webster's Reports, vol. 1, p. 264; and Rolls Chapel Reports, 7th Report, p. 175.]

A.D. 1836, November 28.—N^o 7236.

SNEATH, WILLIAM.—1. Producing embroidery or ornaments on muslins, silks, and other woven fabrics by applying to such purpose the mechanism referred to in N^o 7079, and also the mode of fastening off each of the ornamenting threads at any determined period by drawing one loop within the other.

2. Apparatus for producing loopwork ornaments on woven fabrics, and for fastening off the same by drawing one loop within the other. Hooks and guards are used for making the ornaments on the fabric, which is moved vertically or horizontally according to the pattern; and the fastening off is performed by the hook which passes the ornamenting loops through the fabric, aided by loop-openers.

[Printed, 2s. 10d. Drawings. See Rolls Chapel Reports, 7th Report, p. 181.]

A.D. 1841, May 4.—N^o 8948.

NEWTON, EDWARD, and ARCHBOLD, THOMAS.—Machinery for holding a series of gloves or the cut-out materials for gloves,

and producing ornamental or tambour work on the back of each at the same time, in place of making a single loop at a time by hand. Each glove or portion of material cut out to form a glove is secured in a frame or holder made with three long openings or slots, through each of which two needles work, in order to produce two rows of stitches or loops at such parts of the material ;—there being six needles to each glove, producing six rows of stitches. Each needle is made with an eye near its point to receive the thread, which it carries upwards through the glove, and, on receding, leaves it in the form of a loop ; this loop is caught by a hook, and drawn lengthwise over the spot where the needle will next pass through the glove ; then, on the needle ascending through the glove and through the loop, the hook releases the loop, which is drawn tightly round the stem of the needle ; and as the needle recedes, the hook catches the newly-formed loop and draws it lengthwise, as above described. The machinery also includes suitable arrangements of parts for holding the ends of the threads until they are securely fastened in the work, and for cutting the threads when the rows of stitches or loops are completed.

[Printed, 7s. 2d. Drawings. See Mechanics' Magazine, vol. 35, p. 398 ; and Inventors' Advocate, vol. 5, p. 309.]

A.D. 1842, April 15.—N^o 9322. (* *)

RICHARDS, THOMAS.—“ Improvements in the art of book-binding, and also in the machinery or apparatus to be employed therein.” This invention may be called a bookbinder’s sewing machine ; it is mainly “ composed of a table capable of sliding to and fro in order to feed or supply each sheet of paper separately into the machine ; also needle bars or holders to present needles with the requisite threads for stitching such sheets as they are successively supplied ; a series of holding fingers or pincers suitably provided with motions to enable them to advance and clasp the needles, draw them through the sheets of paper, and return them into their respective holders after threading or stitching the sheet ; and lastly arms or levers for delivering each sheet regularly upon the top of the preceding sheets, in order to form a collection or book of such sheets ready for boarding and finishing.” Two end frames, bolted to standards, support in bearing three shafts, and upon an end of

one is a band pulley "driven by a band or strap proceeding from " a treadle shaft;" but other means may be employed for giving motion to the machine. The various pieces required for connecting the above-named principal parts and for setting them in motion are detailed in the Specification. Each separate sheet "must be previously prepared by being folded singly (and not a " number together, one within another, as in common book- " binding), and having a thread gummed and placed longitudinally close in the fold;" and the ends of the thread "are "to be brought through the back of the fold within a short "distance of the top and bottom," and to be left long enough "to form a substitute for the end papers commonly employed "to secure the boards to the sheet." A sheet so prepared is laid upon the table "with the folded edge just beyond the edge "of the table ready to be submitted to the cross stitching to be "performed by the machine." There are two needle bars or holders with a separate series of needles for each, "and so contrived that the needle holders shall intersect each other;" by this arrangement "only each alternate sheet" is stitched in the same place, and every other sheet is stitched "at the intervening "spaces;" consequently, "the one series of vertical or machine "threads pass inside the longitudinal thread in the folded sheet, "and the other series of threads pass outside or at the back of "the same sheet; and vice versa alternately throughout," thus forming "a complete cloth or woven back, with each sheet "separately secured."

[Printed, 1s. Drawing. See London Journal (*Newton's*), vol. 23 (*conjoined series*), p. 157; Record of Patent Inventions, vol. 1, p. 198.

A.D. 1844, March 14.—N° 10,102.

LISTER, SAMUEL CUNLIFF, and AMBLER, JAMES.—Applying fringes to shawls and other articles by means of machinery furnished with a series of upright fixed needles (each having an eye near the point thereof), whereby the threads intended to form the fringe are passed through the shawl or other article. When the shawl has been pressed down upon the needles it is slightly raised, so as to cause the portion of thread between it and the eye of each needle to slacken, in order that the loose ends may be drawn through the shawl by the workman; the shawl and the ends of the thread being then securely held between a beam and a cloth presser are raised to a suitable height, and the threads are thereby

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drawn through the eyes of the needles to the extent necessary to make the fringe of the desired length; after which the threads are cut off above the needles, and remain attached to the shawl.

[Printed, 6d. Drawing. See Repertory of Arts vol. 4 (*enlarged series*), p. 340.]

A.D. 1844, April 2.—N^o 10,134.

BOSTWICK, LEONARD.—(*A communication.*)—Machine for sewing pieces of cloth or other material together by means of a needle and thread. The cloth passes between several toothed wheels and pinions, and, by the action of the teeth thereof, is formed into doubles or crimps, and pressed in that state on to the needle, which, though not fixed, is always stationary in a horizontal position; and when the work has passed through the machine it will be found that a running stitch has been produced. The needle has an eye at one end for holding the thread, and is bent, in order that it may be placed over one of the pinions, and thereby always kept up to its work, and prevented from running out of the machinery.

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 25 (*conjoined series*), p. 304.]

A.D. 1844, December 7.—N^o 10,424,

FISHER, JOHN, and GIBBONS, JAMES.—I. Working ornamental designs on lace or net and other fabrics by machinery, in such manner that two threads are caused to loop together, one thread passing through the fabric and the other looping therewith on the surface without passing through the fabric. The lace or other fabric is moved by the machinery in various directions according to the nature of the pattern;—these movements, as well as those of the ornamenting instruments, being regulated by jacquard or similar apparatus. The instruments used for working each repeat of the pattern are a curved needle beneath the fabric, and a second needle with a loop guide or retainer above; and the several sets are arranged in a row across the machine. When the point of the curved needle has ascended through the fabric, the point of the upper needle enters between the former and its thread; and on the curved needle descending, it leaves upon the upper needle a loop of its thread, which is then pressed further on by the

guide. The fabric being moved according to the pattern to be produced, the curved needle again ascends, and at the same time the upper needle is moved in such manner that it passes its thread around the curved needle, and then retires through the loop of the lower thread previously upon its stem. After this the upper needle, again advancing, enters between the curved needle and its thread as before, and the above movements are repeated.

2. Machinery for sewing thread, yarn, gimp, cord, or fabrics in pattern on the surface of fabrics. This machinery is similar to the preceding, except that the upper needle and loop guide are removed, and instead thereof a shuttle is used, carrying a thread, gimp, or cord. A reciprocating motion is imparted to the shuttle, so that at each ascent of the needle it will pass between the thread and the bent part of the needle, leaving its own thread, which is sewed or fastened down by the thread of the needle, on the latter descending. When the needle again rises, the shuttle will pass between the thread and needle in the opposite direction, leaving its own thread as before, and so on until the pattern is completed. If desired, a second fabric may be placed on the fabric to be ornamented, and, when sewed together, the former may be cut away between the figures or patterns.

3. Causing the apparatus used for producing tambour work, or other ornamental needlework on lace or net, and other fabrics, to be governed or controlled by jacquard or perforated cards, or plates or surfaces having "transposable risers and fallers" thereon.

4. "Causing the bobbin or carriage threads of twist lace machinery to traverse, when using two warp threads to each bobbin thread, by which the character of net fabrics will thereby be improved, by having the crossing at the tops and bottoms of the meshes produced by the crossings of bobbin threads; and when desired to make single pillars at any parts, the extra warp threads may be left out in the working with their bobbin threads, so as to allow of such extra warp threads being cut off at those parts."

5. So arranging and working twist lace machinery, that the warp threads are governed by independent instruments passing amongst them, actuated by jacquard or perforated cards, combined with the use of a suitable arrangement of apparatus to cause the working of the bobbin or carriage threads to be governed or controlled by jacquard or perforated cards.

[*Printed, &c. 2d. Drawings.*]

A.D. 1845, June 10.—N° 10,716.

FISHER, JOHN, GIBBONS, JAMES, and ROE, THOMAS.

1. Mode of making lace or net with vandyked or scolloped edges.
2. Method of constructing and arranging apparatus for giving motion to guide and other bars of lace machinery requiring various movements to produce different effects in working.
3. Improvements in the machinery used in producing warp fabrics.
4. Improvements in arranging the apparatus for producing ornamental tambour or looped work on lace and other fabrics, which formed the first part of the invention protected by Letters Patent, dated December 7, 1844, N° 10,424. In the former Specification such apparatus was described as being suitable for producing one row of figures or designs at the same time by a row or series of sets of ornamenting instruments. The present improvements consist in so arranging the machinery that several rows of instruments may be brought into action simultaneously, so as to produce a series of rows of designs or ornaments.

[Printed, 8s. 8d. Drawings.]

A.D. 1846, January 6.—N° 11,025.

WALKER, ARTHUR ELDRED.—Apparatus for sewing fabrics together by a needle and thread. The needle is straight, and is kept stationary in a horizontal position by two catches, which have at all times a tendency to press against corresponding stops on the needle, but are respectively held back at proper intervals to allow the fabrics which have accumulated on the needle to pass under them. The fabrics are fed on to the needle by means of a rising and falling bar, which alternately carries them above and below the point of the needle ; and as the fabrics are constantly drawn along the needle by rollers, this rising and falling movement will cause the fabrics to pass on to the needle in an undulating form, whereby a running stitch will be produced.

[Printed, 2s. 6d. Drawings.]

A.D. 1846, December 1.—N° 11,464.

THOMAS, WILLIAM.—(*A communication.*)—Machinery for sewing or stitching fabrics, so as either to unite or to ornament the *same*. The principal feature is the combination of a vibrating needle

with a shuttle; which shuttle, when the point of the needle has entered the cloth or other fabric and formed a loop of thread, passes through that loop, and leaves a thread on the face of the cloth; whereby the needle, instead of drawing back the thread with it, on being withdrawn from the cloth, is caused to leave a tightened loop on the opposite side of the cloth to that at which it entered; and the fabric then passing forward a distance corresponding to the length of stitch required, is again pierced by the needle, and a fresh stitch produced. The needle used in this machinery is curved, and has an eye near the point. The fabric to be sewed may be carried by a steel rib or plate, or it may be held by a sliding frame, whereby it can be moved in any required direction to receive straight and curved lines of stitches, and likewise stitches which will form various patterns of embroidery.

The invention also includes the employment of a helical needle for joining two edges together, so as to produce that kind of sewing which is frequently used in glove-work, and which covers the edges with the stitches.

[Printed, 1s. 6d. Drawings.]

A.D. 1846, N° 11,464.*

THOMAS, WILLIAM.—(*A communication.*)—Disclaimer to the Specification of letters patent December 1, 1846, No. 11,464, filed May 9, 1855.

The Inventor disclaims the use “in a machine of several needles “and shuttles,” and any of the mechanical parts separately of “which the machinery shewn in the drawings” attached to the specification of his patent “is composed.”

“And as that part of the Invention which consists of using a “helical needle has not come into public use,” the Inventor disclaims all parts of the specification which describe and claim such system.

[Printed, 4d. No Drawings.]

A.D. 1846, N° 11,464.* *

THOMAS, WILLIAM.—(*A communication.*)—Second Disclaimer and memorandum of alteration to the Specification of Letters Patent December 1, 1846, No. 11,464, filed July 29, 1858.

The Patentee disclaims the *general* claim of the “application of “a shuttle, in combination with a needle . . . for forming and

" securing loops of thread or other substance for the purpose of
" producing stitches either to unite or ornament various fabrics,
" whatever may be the means employed for working such shuttle
" and needle when employed together."

He also disclaims "the construction and use of the sliding
" frame," whereby he is "enabled to hold the cloth in such a
" manner that it may be moved in any required direction to
" receive straight and curved lines of stitches, and also stitches
" which will form various patterns of embroidery" and also "the
" mode of actuating the frame."

[Printed, &c. No Drawings.]

A.D. 1848, February 9.—N° 12,060.

MAGNIN, JEAN MARIE.—(*Partly a communication from Barthélémy Thimonnier.*)—Machine for sewing, embroidering, and making cords or plats by the employment of a needle or hook, a nipple, and a rotatory thread carrier in combination. The thread carrier is situated beneath the table whereon the fabrics to be sewed or embroidered are placed. The needle has a descending and ascending movement, so as to cause its hooked end to pass through the fabrics down to the thread carrier, and then to ascend therefrom. The nipple surrounds the stem of the needle, and descends on to the fabric at stated intervals. When the hooked end of the needle descends through the fabrics, the nipple comes down, and holds the fabrics firmly; the thread carrier passes the thread around the needle, which then ascends, carrying the loop of thread through the fabrics, and through the loop previously made; after which the nipple rises, the fabrics are moved onward a distance equal to the length of stitch required, and the above-described movements are repeated.

If the above mechanism is put in operation without placing any fabrics on the table, a looped cord is produced.

[Printed, 3s. Drawings. See *Artizan*, vol. 6, p. 85; and *Patent Journal*, vol. 6, p. 317.]

A.D. 1848, July 26.—N° 12,221.

THOMAS, WILLIAM—(*A communication.*)—1. Improvements in weaving ornamental figures in stay fabrics.

2. Mode of taking up the work when weaving gores in stay fabrics.

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3. Improvements in the means of weaving gores and plain parts of stay fabrics.

4. Apparatus for sewing fabrics, in which the needles, having an eye in the centre and pointed at each end, are simply caused to pass through the fabrics from either side alternately, and the threads are drawn through after each ascent by hooks or other suitable instruments.

5. Producing a tambour stitch by introducing the thread through the fabric by means of a curved needle, and causing a hooked instrument to take hold of the thread which lies across the bend of the needle, and hold it in the form of a loop whilst the needle returns; and on the needle again entering the fabric, the point passes through the loop held by the instrument, the hook of which then passes to the right (releasing the loop), and, in passing back to the left again, takes another quantity of thread to form a new loop.

6. Mode of using a shuttle in connexion with a hooked instrument in order to produce stitching. The hook passes through the fabric, and the thread is lapped on to it by a guide or bent arm; the hook then returns with the thread in the form of a loop, and the shuttle being thrown across, its point opens the loop, and the shuttle passes through, leaving its thread therein; after which, by the action of a spring, the thread carried by the guide is drawn back, so as to close the loop. This apparatus may be used for sewing leather as well as fabrics, in making boots and shoes; it may also be employed for stitching fabrics, and for sewing and connecting fabrics and parts of garments.

7. Improvements in the manufacture of boots.

8. Mode of connecting trousers and gaiters to boots and shoes.

[Printed, 4s. 6d. Drawings. See Mechanics' Magazine, vol. 50 p. 114; Artizan, vol. 7, p. 154; and Patent Journal, vol. 6, pp. 163 and 167.]

A.D. 1849, February 8.—N° 12,462.

BROWN, ROBERT.—Arranging machinery to effect the sewing or stitching of one or more pieces of fabric or material, by passing a needle (having an eye in the centre and pointed at each end) through the same, from opposite sides alternately,—the operation being facilitated by a perforating instrument, which makes the holes for the needles; also so arranging the machinery that pegs and pins for rivets may be inserted through the holes made by the

perforating instrument, and such pins may have their ends acted on to rivet two or more pieces of metal together. One needle is used to sew, with a single thread, two or more pieces together; but when stitching is to be performed or a double thread used, two needles are employed. The thread is attached at one end to the eye of the needle, and at the other end is held in the work after the first sewing through has taken place; and in order to draw the thread through and tighten the new stitch after the needle, two hooked instruments are used, one at each side of the fabric. When an "over-and-over" stitch is required, the frame that contains the fabric is caused to move out of the way after every other movement of the needle, so that only each alternate movement will produce a stitch.

[Printed, 2s. 6d. Drawings. See Mechanics' Magazine, vol. 51, p. 141.]

A.D. 1849, August 9.—N^o 12,736.

THOMAS, WILLIAM, and MARSH, JOHN.—(*Partly a communication.*)—1. Improvements in the manufacture of looped fabrics.

2. Improvements in weaving fabrics for making stays and other parts of dress where the fabrics are required to be of different widths.

3. Machinery for producing tambour stitches on stays and other articles of dress. The work to be tamboured is laid on a table, and held thereon by an instrument formed with an eye, through which and through the fabric a hooked instrument descends, and the thread is carried around it by a thread carrier; the hooked instrument then ascends and draws the loop of thread through the fabric and through the loop previously formed.

4. Mode of weaving thick stay cloth, consisting of two fabrics stitched together by stitching warp, and so as to receive filling weft between the two fabrics.

5. Improvements in giving shape to the bust, in place of the wadding usually employed.

6. Means of fastening stays and parts of dresses.

7. Making hoops or apparatus for distending dresses.

8. Mode of weaving moreen to produce crinolines and such like stiffened parts of dress.

9. Improvements in measuring apparatus.

[Printed, 5s. 4d. Drawings. See Mechanics' Magazine, vol. 52, p. 138; and Patent Journal, vol. 8, p. 261.]

A.D. 1849, August 30.—N° 12,752.

MOREY, CHARLES.—1. Producing a “basting” or “running” stitch for uniting coarse materials (such as canvas or sacking), by introducing the fabric between a pair of toothed wheels, which give it an undulating form and push it on to a long straight needle, the point whereof rests in a circular opening formed by the coincidence of a series of notches in the teeth of each wheel, and the head (which is made with an eye to receive the thread) is sustained by an upright or standard.

2. Executing sewing in the chain or tambour stitch, by means of a needle and a hooked instrument, or a needle and a pointed instrument. The needle (which is formed with an eye near its point) perforates the cloth, carrying with it the thread which is taken by the hooked or pointed instrument and held in the form of a loop whilst the needle recedes and the cloth is shifted; when this has been effected, the point of the needle again passes through the cloth and through the loop held by the hook or point, which then releases it, and taking hold of the thread just introduced draws it into a loop, as before.

3. Sewing by means of a vibrating needle and a shuttle travelling in a circular shuttle-race. The needle is curved with an eye near its point to receive the thread, which it carries through the cloth and across the shuttle-race; and when the needle recedes it leaves the thread in the form of a loop, through which the shuttle passes, leaving a filling thread therein.

4. Machine in which the sewing is effected by means of two threads, as in the last machine, but instead of the shuttle having a rotary motion, a reciprocating curvilinear motion is imparted to it.

5. Machine for producing a similar stitch to that produced by the first machine, but applicable to finer descriptions of work, the arrangements permitting the use of a finer needle, which is sustained throughout its whole length. Instead of two toothed wheels one toothed wheel and a rack bar are used. The needle is placed in a channel formed in the rack bar and toothed wheel, and retained in its proper position by a holder at the hinder end. Motion being given to the toothed wheel and rack bar, the fabrics (such as the gores of umbrellas) are pushed on to the needle in an undulating form, until the point of the needle emerges from the fabrics. When this has been effected, a thread is passed

through the eye (which is near the point of the needle), and the motion being reversed the fabrics are drawn off the needle; and then the thread, which is thus introduced into them, is fastened at each end.

[Printed, *4s.* Drawings. See Mechanics' Magazine, vol. 52, p. 194; and Patent Journal, vol. 52, pp. 42 and 67.]

A.D. 1849, November 13.—N° 12,842.

PARNALL, ROBERT.—Facilitating the operation of stitching and sewing by the use of an instrument formed with fine teeth or points for piercing or perforating a series of holes in woven fabrics, through which holes the thread is to be passed by a needle in the ordinary manner.

[Printed, *1s. 4d.* Drawings. See Mechanics' Magazine, vol. 52, p. 397.]

A.D. 1850, April 15.—N° 13,038.

REID, ROBERT.—Sewing or working figures into cloth during the process of weaving, by means of small bobbins or pirns carried by suitable shuttles.

[Printed, *1s.* Drawings. See Repertory of Arts, vol. 17 (*enlarged series*), p. 91; Mechanics' Magazine, vol. 53, p. 317; and Patent Journal, vol. 10, p. 33.]

A.D. 1850, November 7.—N° 13,321.

LEROW, JOHN ALEXANDER.—Apparatus for sewing by means of a vibrating or reciprocating needle and a shuttle travelling in an endless shuttle-race; the needle (which is straight, with an eye near its point) passing through the fabric and forming loops in which a filling thread is left by the shuttle.

[Printed, *8d.* Drawing. See Mechanics' Magazine, vol. 54, p. 397.]

A.D. 1850, November 7.—N° 13,325.

CHRISTIE, DAVID.—(*A communication.*)—Machine for opening and cleaning cotton, wool, &c.

Fine comb cylinder, applicable to machines for opening and cleaning fibrous substances.

Machine for cleaning and carding cotton, wool, &c.

Machine for opening and separating the fibres of cop bottoms or other thread waste, so as to prepare the same for carding; such

machine being also adapted to the purpose of opening or picking raw cotton or other fibrous substances.

Improvements in machinery for opening cop bottoms and other hard twisted waste.

Card clothing for covering rollers used in machinery for carding flax, coarse wool, cotton waste, &c.

Improvements in machinery for spinning and doubling.

Machinery for twisting shawl fringes and other articles of the same description.

Jacquard looms for weaving figured fabrics.

Circular rotary knitting machines.

Machinery for packing and pressing substances.

Sewing machine, in which a needle attached to a vibrating or reciprocating arm carries the thread through the fabric, so as to form a loop, and a filling thread is then left therein by a shuttle which travels to and fro in a straight shuttle-race.

[Printed, 4s. 8d. Drawings. See Mechanics' Magazine, vol. 54, p. 398; Artizan, vol. 10, p. 120; and Patent Journal, vol. 11, pp. 119 and 148.]

A.D. 1851, February 7.—N° 13,494.

ROBINSON, FREDERICK F.—Machine for producing either stitch and backstitch sewing or ordinary stitching. The patentee states that by stitch and backstitch sewing he means "that in which a thread after being carried through a piece of cloth from its front to its rear side is moved backwards the width of the stitch, is next again carried through from the rear side to the front side of the cloth, is next carried forwards laterally double the width of the stitch, or some other suitable distance greater than the width of the stitch, and is next passed through the cloth from its front side to its rear side; such operation being successively repeated in the formation of the stitches." By ordinary stitching he means "that in which a thread is passed through the cloth from its front side to its rear side, is next moved forwards the width of the stitch, is carried backwards through the cloth from its rear side to its front side, is next carried forwards the width of the stitch, and is again passed through the cloth from its front side to its rear side, and so on. This is frequently called the running or basting stitch." The apparatus may be also adapted to the production of the ordinary cordwainer's stitch, which is made by two threads crossing each other every time they are passed through the cloth.

The principal operating parts are two curved needles, having a notch or eye near the point suitably shaped to enable them to act as hooks, and two thread guides. The needles are fixed to the legs of a vibrating frame, with their points towards each other at opposite sides of the cloth, so that as one needle advances towards the cloth the other recedes from it. With this apparatus only a short piece of thread is employed, such as a person uses when sewing by hand with an ordinary needle. The thread is secured at one end by a spring in front of the cloth, and then laid over the back needle after it has passed through the cloth, so that on the return of the needle its eye will catch the thread and draw it through the cloth; as the needle continues to recede it draws the thread with it until the free end of the thread is drawn through the cloth, and then the thread is laid by the back guide over the front needle, which has in the meantime passed through to the rear side of the cloth; the return movement of the front needle draws the thread through to the front side of the cloth, where it is laid by the front guide over the back needle, and the above movements are repeated.

To produce stitch and backstitch sewing, the two needles must not stand in the same vertical plane, but should be arranged in two vertical parallel planes, situated at a distance apart equal to the length of a stitch, and the cloth holder should be moved forward only during each outward movement of the needle frame. For ordinary stitching the two needles must be arranged in the same vertical plane, and a forward movement of the cloth holder should take place during each movement of the needle frame.

[Printed, 10d. Drawing. See Repertory of Arts, vol. 17 (*enlarged series*), p. 336; Mechanics' Magazine, vol. 54, p. 437; and Patent Journal, vol. 12, p. 61.]

A.D. 1852, June 10.—N^o 14,161.

HOULDSWORTH, HENRY.—“Improvements in embroidering machines, and in apparatus used in connection therewith.” The inventor alludes to the embroidery machine patented by Henry Bock on the 2nd May 1829 (Specification 5788), and his improvements have reference to—

(1.) The clearer. Here the inventor, by certain contrivances, causes the thread to be retained in a succession of short loops when the needles are brought up to the cloth, until they are drawn *out one after the other*, by the outward motion of the opposite

carriage, and "by this subdivision the knotting of the threads is prevented."

(2.) The faller apparatus used to clear the threads from the needle points. "The threads pass from the cloth in the cloth "in the cloth frame, under the faller wire, to the eyes of the "needles in the nippers, and form an angle at the point where "they are depressed by the faller wire. When one or more of "these threads are brought into a state of tension by the out- "ward movement of the carriage, the faller wire is raised by the "tightened thread or threads, but not so high as to admit of "the threads getting on to the points of the needles, which it "is one object of the faller wire to prevent. When the carriage "moves in, the faller wire, before the carriage reaches the cloth "frame," is raised above the points of the needles and withdrawn behind the face of the nippers before the needles enter the cloth.

(3.) "Maintaining a more perfect adjustment of the needle "beds at the time when the needles are entering and leaving the "nippers."

(4.) "A self-acting break or apparatus for the purpose of "arresting the carriage in their motion onwards, when a thread "knots, or the tension of the embroidering threads require it, "and likewise to check the velocity of the carriages as they "approach the stops in moving inward."

(5.) The permanent cloth frame, upon which the fabric is to be embroidered is strained.

(6.) The threading stands to facilitate threading the needles and "to secure a uniform length of the embroidering thread."

[Printed, 2s. 4d. Drawings. See Mechanics' Magazine, vol. 57, p. 497.]

A.D. 1852, July 27.—N° 14,240.

HOULDSWORTH, HENRY, and HOULDSWORTH, JAMES.
—Embroidering machinery.

"The chief object of the invention is to produce curved lines "of embroidery from patterns worked in straight lines, and that "the means by which this particular effect is produced is by "arranging, fixing, and presenting the cloth to the action of the "embroidering needles in a curved form, the curve being in the "plane of the cloth, so that the warp or weft threads (according "as the line of embroidery is intended to run lengthways or "across the piece) shall present, while the surface is being em-

" broidered, curves equal to that which the embroidery is desired " permanently to present when the cloth is removed from its " constrained position, and assumes its ordinary state of non- " extension."

This invention is supplemental to that described in the Specification of the patent granted to Henry Houldsworth on 10th June 1852, No. 14,161.

[Printed, 1s. 2d. Drawings. See Mechanics' Magazine, vol. 58, p. 135.]

A.D. 1852, August 10.—N° 14,256.

HUGHES, EDWARD JOSEPH.—(*A communication.*)—"Improvements in machinery or apparatus for spinning and weaving cotton, wool, and other fibrous substances, and also in machinery or apparatus for stitching either plain or ornamentally."

The inventor's sewing machinery embraces the following:—

(1.) "A notched or rough-faced bar, for feeding the cloth or other material along that is to be stitched, the said bar having a vertical or up and down motion for fastening the material upon, releasing it from the notches, and striking it against a yielding plate, to move it along after each stitch is made."

(2.) "The application of two needles in combination with each other for the purpose of stitching or uniting fabrics or materials; one of the said needles to be straight, and work in a vertical position, the other to be curvilinear, and work in a horizontal position."

These two claims relate to a distinct machine.

(3.) The combination and arrangement of certain mechanism for working a needle and shuttle "by which said mechanism is given to the shuttle an additional forward motion after it has been stopped to close the loop or bow, for the purpose of drawing the stitch tight, when such additional motion is given at and in combination with the feed motion of the cloth in the reverse direction, and the final upward motion of the needle, so that the two threads shall be drawn tight at the same time."

(4.) "Controlling the thread during the downward motion of the needle by the combination of the friction pad, to prevent the slack above the cloth with the eye on the needle carrier for drawing back the thread."

(5.) "Placing the bobbin from which the needle is supplied with thread on an adjustable arm attached to the frame, when

“ this is combined with the carrying of the said thread through
 “ an eye or guide attached to and moving with the needle carrier,
 “ whereby any desired length of thread can be given for the for-
 “ mation of the loop without varying the range of motion of the
 “ needle.”

(6.) “ The application of two straight needles in combination
 “ with each other.”

(7.) “ The arrangement of mechanism for working the said
 “ two straight needles; in which arrangement is used needle
 “ bars, spring holders, and adjustable guides, for the purpose of
 “ regulating the length of the stitch.”

[Printed, 1s. 2d. Drawings. See Mechanics' Magazine, vol. 58, p. 155.]

A.D. 1852, N° 14,256.*

HUGHES, EDWARD JOSEPH.—Disclaimer and Memorandum of Alteration to the Specification of Letters Patent, 1852, No. 14,256, filed by Alexander Stewart Jordan, July 14, 1859.

By this disclaimer and alteration the claims under the patent are reduced to the two first mentioned in the abridgment of the original Specification.

[Printed, 10d. Drawing.]

A.D. 1852, September 10.—N° 14,287.

BERNARD, JULIAN.—1. Novel mechanical arrangements and combinations for lasting or mounting the uppers upon boots and shoes.

2. Mode of piercing or screwing holes in the soles of boots and shoes, and inserting and moulding plastic or soluble materials into suitable holes made or formed for that purpose in the parts to be connected.

3. Stitching or sewing the outer soles of boots and shoes, whether composed of one or more thicknesses, near and around the edges; such outer soles being attached to the inner soles and uppers by the means described under the second head of this invention; and the stitching being intended for ornament as well as for connecting the edges when composed of two or more thicknesses, and not for the purpose of connecting such sole or soles to the upper by means of welts, as usual.

4. Mode of waterproofing and strengthening the uppers of boots and shoes, whereby the stitching of the strengthening pieces or lining can be dispensed with.

5. Mechanical arrangements intended, firstly, to produce "double stitching," in which two threads or filaments are required to be passed through the same hole, as practised by saddlers and boot makers; and secondly, to produce "back and fore" stitching," as practised by tailors for the seams of garments. The double stitching is effected by means of two ordinary needles and three needle holders, one holder being placed at one side of the frame carrying the material to be sewed, and the other two holders on the opposite side of the frame. A hole is made in the material by a piercer, and the needle held by the single holder is passed by it through the hole, and received by one of the holders on the opposite side; then the needle held by the third holder is passed through the hole, and received by the single holder; after which the material is moved forward, a hole is made by the piercer, and the needle held by the single holder is turned over, so as to present its point to the material, and is passed through the hole, and received by the third holder; then the needle held by the second holder is turned over, and passed through the hole; and in this manner the two threads or filaments are successively passed through the same hole in opposite directions. The back and fore stitching is produced by using one ordinary needle and two holders, and communicating to the frame that carries the material, between its successive forward motions, a reversing movement equal to half its forward motion. The thread having been carried by the needle through the material, the latter is moved forward the length of two stitches; the needle is then passed through in the opposite direction, and the material is moved backward the length of one stitch; after which the needle is again passed through, and the above movements are repeated. Instead of using a needle of the ordinary construction, a double-pointed needle may be substituted; and the needle may be made of an angular form in the cross section, so as to produce stitching or sewing different from that produced by ordinary needles.

[Printed, 5s. Drawings. See Mechanics' Magazine, vol. 58, p. 255.]

A.D. 1852, October 19.—N° 14,328.

NEWTON, WILLIAM EDWARD.—(*A communication.*)—Making a seam by carrying a thread through the fabric, and forming it into

a loop on the under side thereof, passing through this loop the loop of a second thread, and then carrying through the latter a loop of the first thread, so as to form a double loop stitch. Using for this purpose two needles operating alternately, one needle being straight and working vertically, and the other being nearly circular and having a partial rotary movement in a horizontal plane.

Mode of feeding or moving the cloth along under the vertical needle.

Arrangements for taking up the slack of the thread of the horizontal needle and of the thread of the vertical needle ; for folding the binding upon the fabric ; and for tightening the spools and obtaining a proper and even tension upon the respective threads.

[Printed, 1s. Drawings.]

PATENT LAW AMENDMENT ACT, 1852.

1852.

A.D. 1852, October 6.—N^o 251.

BELLFORD, AUGUSTE EDOUARD LORADOUX.—(*A communication.*)—“ Improvements in sewing machines.” “ The main feature or first part of the invention consists in a rotating hook, by which the loops of the first thread, or that carried by the needle, are extended, upon being passed through the cloth, to a suitable size, to allow the second thread to be passed through them. The thread is supplied to the needle by a bobbin, which may be either stationary or move with the needle, and the second or back thread is carried by a bobbin which has to pass through every loop after it is extended by the rotating hook ; this bobbin which carries the back thread may either be

" stationary in the line of its axis, or may have a reciprocating motion in the said line. In case of the bottom being stationary " it is so formed and so arranged in relation to the rotating " hook that as the hook extends the loop it will pass it over the " bobbin, but if the bobbin has a reciprocating motion it is " passed in alternately opposite directions through the loop. " Every passage of the bobbin through a loop forms a stitch " when the loop is tightened.

The improvements consist also, "in a method of tightening each stitch by the extension of the loop in forming the succeeding stitch."

Also in means of feeding the cloth by a feed bar, a spring with its teeth, a cam on the mandril and an eccentric stop.

And finally in a pad of leather or other material, applied to press on the disc, of which the rotatory hook forms part, and prevents the hook slipping entirely off it before the succeeding loop is caught by the hook, the pad being removed at proper time to release the loop.

[Printed, 1s. Drawings.]

A.D. 1852 N° 251.*

BELLFORD, AUGUSTE EDOUARD LORADOUX.—Disclaimer and memorandum of alteration to the Specification of Letters Patent, October 6, 1852, No. 251, filed March 29, 1862, by the Wheeler and Wilson Manufacturing Company. By this document a method of moving the cloth "progressively forward" by means of a feed bar, a spring with its teeth, a cam on the mandril and an eccentric stop, are disclaimed.

[Printed, 4d. No Drawings.]

A.D. 1852, October 12.—N° 347.

BELLFORD, AUGUSTE EDOUARD LORADOUX.—(*A communication.*)—Machinery for sewing with two threads, which are passed through the cloth from opposite sides in a regular alternate succession of loops, each loop passing through its predecessor, and being passed through by its successor. This is effected by two straight needles, arranged at any suitable angle to each other, and protruding through the cloth from opposite sides alternately; each needle carrying a certain portion of thread, which is caught

by the other needle as it passes through the cloth, and formed into a loop by the withdrawal of that needle by which it is carried.

[Printed, i.e. Drawings.]

A.D. 1852, October 16.—N^o 413.

JUDKINS, CHARLES TIOT.—“ Improvements in machinery or “ apparatus for sewing or stitching.”

The inventor says, “ I work the shuttle by a driver, between “ the ends of which the shuttle lies with a slight play, so that “ when the driver acts on the back end of it to force it through “ the loop . . . there is sufficient space between the for- “ ward end of the driver and the shuttle for the passage of the “ thread, and at the end of this motion the shuttle remains nearly “ in a state of rest for an instant, whilst the driver receives “ a slight back movement to permit the passage of the thread “ between the back end of the shuttle and the driver. The “ shuttle remains nearly stationary whilst the needle is rising, “ and at the time the feed motion is given to the cloth, by means “ of which there are three pulls given simultaneously—the up- “ ward pull of the needle on the needle thread, the feed motion of “ the cloth or material in one direction, and the strain in the “ other, so that the two threads are drawn together to draw the “ stitch tight. The small spool or bobbin which supplies the “ shuttle with the silk or thread is placed in the shuttle, and in “ the axle or tube thereof is a spring to control or regulate “ the supply of the silk or thread to the shuttle. The thread to “ the vertical needle is regulated or controlled during the down- “ ward motion by means of a regulator turning on a pin or wire, “ which makes a slight pressure on the silk or thread as the “ needle descends, which pressure may be increased or diminished, “ as circumstances may require, by simply turning the lever “ thereof a little up or down. This silk or thread passes from the “ spool or bobbin, which is fixed on the frame of the machine in “ any convenient position, through the said regulator connected “ to the machine nearly opposite to the needle carrier, is guided “ to the bottom part of the vertical needle, and passed through “ in eye about half an inch from its point, so that as the needle “ descends it passes through the cloth, and then partially rises or “ retrors, thus forming a loop or bow; then the shuttle carries

" the silk or thread through the loop or bow, and it is tightened
" as already described, thus forming a stitch." To feed the fabric,
there is " a notched bar or bearing " on which the material to be
sewed rests, which material is held to it by a plate pressed upon
it by a spiral spring. A small spring plate attached to this
" prevents the material from rising or the stitch being missed
" when a seam or increased thickness of material presents itself."

[Printed, 8d. Drawings.]

A.D. 1852, N° 413.* .

JUDKINS, CHARLES TIOT.—Disclaimer and memorandum of
alteration to the Specification of Letters Patent, October 16, 1852,
N° 413. Filed March 12, 1862, by Daniel Foxwell.

The assignee disclaims " so much of the said specification as
" relates to the means or methods of or mechanical arrangements
" for regulating the supply of thread or silk to the needle and
" shuttle ; and also for accomodating the machinery to different
" thicknesses of the thread or silk ; and also for preventing the
" material rising, or the missing of the stitch when different
" thicknesses present themselves ; and also the separate working
" parts of the said machines separate and apart from the general
" combination and arrangement thereof."

[Printed, 8d. Drawing.]

A.D. 1852, November 6.—N° 658.

CORRY, JOHN RYALL, and CORRY, JAMES BARRETT.—" A
" new method of sewing gloves."

The invention consists in the use of elastic stitching. " By the
" aid of Winter's glove sewing machine [patent expired] it can
" be done in the following manner :—To effect a fast holding
" together of the first stitch the two pieces to be united, of what-
" ever material is used, must be brought together with great pre-
" cision on the upper or outer edges ; having thus obtained a
" good fastening in the first stitch, in the left hand of the sewer
" is to be held the thread, forming a loop through which the
" needle passes, making a half knot or hitch, which throws the
" thread longitudinally on the surface of the fabric in use, holding
" such stitch together elastically, thereby causing it to wear
" strong and well."

“ When worked by hand, it is effected by the sewer holding the thread in a semicircle under the thumb of the left hand, pressing it on the fore finger.”

[Printed, *ed.* Drawing.]

A.D. 1852, November 10.—N^o 700.

JOHNSON, WILLIAM.—(*A communication.*)—(*Provisional protection only.*)—Mechanism for sewing by means of a hooked needle, somewhat similar to a crotchet needle (but fitted with a sliding piece to close the hook previous to its withdrawal from the fabric), working with an up-and-down movement in combination with thread guides beneath the fabric, so as to produce either the well-known chain or looped stitch with a single thread, or a stitch formed of two threads in such a manner that the loops of one thread shall alternately pass through or be interlooped with those of the other thread. In producing the stitches with two threads, the needle descends through the fabric, and one of the guides supplies its hook with a thread, which it draws up in a looped form through the fabric and through the loop previously made; the fabric now moves forward, and the needle, descending through the last loop, passes through the fabric in a different place, and the second guide places its thread in the hook, which draws it out in the form of a loop through the loop of the other thread.

[Printed, *ed.* No Drawings.]

A.D. 1852, November 11.—N^o 713.

JOHNSON, JOHN HENRY.—(*A communication.*)—“ Improvements in machinery or apparatus for sewing and stitching.”

A vertical sliding needle carrier, actuated by a stud pin in the side of a disc, is employed. The pin works in a differential groove in the side of the needle carrier, by which means a differential vertical movement is given to the needle. The thread may, if necessary, be passed through a reservoir containing wax, after which it is passed round or through an adjustable friction guide and then through a hook or eye on the needle carrier. The material is fed by a small wheel, having a roughened surface, and receiving its motion intermittently and indirectly from the main shaft. “ A small plate with a smooth under surface, and having a helical spring above it, serves to hold the material down on to

" the surface of the feeding wheel. A shuttle is caused to traverse backwards and forwards in a groove beneath the material, " the same being supplied with a reel. It receives its requisite " movements in a similar manner to the needle carrier."

[Printed, 8d. Drawings.]

A.D. 1852, December 6.—Nº 975.

PATON, WILLIAM.—(*Provisional protection only.*)—Manufacturing a substitute for the leather, gutta percha, or other driving bands at present in use, by sewing or otherwise attaching together a series or row of cotton bands, so as to form a flat driving band like the flat ropes used in mining.

[Printed, 4d. No Drawings.]

1853.

A.D. 1853, January 18.—Nº 124.

NEWTON, ALFRED VINCENT, (*A communication.*)—Arrangement of machinery wherein a bearded needle is employed for throwing a line of looped stitches into the fabric required to be stitched. The needle has a quick reciprocating motion, similar to that of the needles of stocking frames, and is in like manner supplied with thread; so that when it passes through the fabric the thread is laid under the beard, and by the return movement of the needle it is drawn in the form of a loop through the fabric and through the previously made loop; and in this manner a line of stitches is formed, the thread appearing double on one side of the fabric and single on the other side.

[Printed, 8d. Drawing.]

A.D. 1853, February 15.—Nº 398.

DIRCKS, HENRY.—(*A communication.*)—(*Provisional protection only.*)—The inventor claims—

I. " Giving the shuttle an additional forward motion after it " has been stopped to close the loop for the purpose of drawing " the stitch tight, when such additional motion is given at and " in combination with the feed motion of the cloth in the reverse

“ direction and the final upward motion of the needle, so that the
“ two threads shall be drawn tight at the same time.”

2. “Controlling the thread during the onward motion of the
“ needle by the combination of a friction pad, to prevent the
“ slack above the cloth with the eye on the needle carrier for
“ drawing back the thread.”

3. “Placing the bobbin from which the needle is supplied with
“ thread on an adjustable arm attached to the framework, when this
“ is combined with the carrying of the said thread through an eye
“ or guide attached to and moving with the needle carrier, where-
“ by any desired length of thread can be given for the formation
“ of the loop, without varying the range of motion of the needle.”

4. An arrangement of wheel feeds.

[Printed, 8d. Drawing.]

A.D. 1853, April 11.—N° 869.

NICOLL, DONALD.—(*Letters Patent void for want of Final Specification.*)—1. Improving coats, paletots, and such-like articles of male apparel, by inserting a “sey piece” under the arms, and thereby dispensing with a cross seam in the waist.

2. Attaching trousers and waistcoats together, so as to dispense with the use of braces passing over the shoulders.

3. Mode of uniting or forming the seams of garments by sewing, so as to produce seams which do not require turning in or doubling.

[Printed, 4d. No Drawings.]

A.D. 1853, April 21.—N° 966.

JOHNSON, WILLIAM H.—Making what the patentee terms the “belaying double loop stitch,” with a single thread, by the employment of one needle (having an eye near its point), and a double spring hook, over which the loops are formed,—the needle working vertically and having a vibratory side motion, so that each time it passes through the cloth, the latter is moved forward a sufficient distance for the succeeding perforation. The result of the operations of the above-named parts being, in the words of the patentee, “the forming or making of a seam from a single “ thread, by the running of a loop of the thread through the “ material to be sewn, the running of a second loop through the “ material and putting the first loop through it, the running of a

" third loop through the material and through the first-named
" loop, the carrying of a fourth loop through the material and
" putting the third through it, and so on, putting the first loop
" through the second and around the third, the third loop through
" the fourth and around the fifth, and so on, forming the belaying
" double loop stitch herein described."

[Printed, &c. Drawing.]

A.D. 1853, April 27.—N° 1026.

THOMAS, WILLIAM FREDERICK.—"Improvements in apparatus for sewing or stitching" relating to—

- (1.) Means for regulating the distance traversed by the needle.
- (2.) "The application of a wire lengthwise of the shuttle, over or around which the thread carried thereby passes."
- (3.) "The application of springs in the shuttle race, to press on the thread from the shuttle and give tension thereto."
- (4.) "Arranging and working the means for holding the fabric whilst the insertion of the needle is effected, that the same may also effect the requisite traverse of the fabric."
- (5.) "The general combination by which the working levers act direct between the cams, and the working instruments or their carriers, and in straight lines or nearly so."

[Printed, &c. Drawing.]

A.D. 1853, . . . N° 1026.*

THOMAS, WILLIAM FREDERICK.—Disclaimer and memorandum of alteration to the Specification of Letters Patent, dated April 27, 1853, No. 1026, filed August 3, 1861. He disclaims the capability of varying the length of motion of the needle previously claimed, and the application of springs to the shuttle race. He also disclaims the application to the shuttle or thread carrier, of a wire "lengthwise thereof, around which the thread first passes from the bobbin or spool carried by the shuttle to the holes in the side of the shuttle." According to the amended Specification "the peculiarity" of the invention "is the arranging an instrument . . . which, whilst it is the means of holding the fabric or material during the insertion or withdrawal of the needle is also the means by which" the fabric is fed forward. When the needle is in the fabric, "the instrument rises off the fabric being sewn, and moves towards

“ the needle, a distance equal to that required to be traversed for
“ the formation of the next stitch, and again holds by pressing
“ on the fabric; the needle then rises through the fabric (the
“ thread therefrom having been interlooped by the shuttle thread),
“ and the instrument still pressing on the fabric being sewn is
“ caused to slide on the table taking with it the fabric being
“ sewn a distance equal to the length of stitch required; and
“ whilst that instrument still holds the work the needle again
“ enters the fabric. The under side of the instrument is
“ roughened to facilitate its sliding with it the fabric or material
“ being sewn.”

[Printed, 1s. Drawing.]

A.D. 1853, May 10.—N° 1150.

JOHNSON, WILLIAM.—(*A communication from William Wickersham.*)—Mechanism for sewing by means of a hooked needle, somewhat similar to a crochet needle (but fitted with a sliding piece to close the hook previous to its withdrawal from the fabric), working with an up-and-down movement in combination with thread guides beneath the fabric, so as to produce either the well-known chain or looped stitch with a single thread, or a stitch formed of two threads in such manner that the loops of one thread shall alternately pass through or be interlooped with those of the other thread. In producing the stitches with two threads, the needle descends through the fabric, and one of the guides supplies its hook with a thread, which it draws up in a looped form through the fabric and through the loop previously made; the fabric now moves forward, and the needle descending through the last loop, passes through the fabric in a different place, and the second guide places its thread in the hook, which draws it out in the form of a loop through the loop of the other thread.

[Printed, 2d. Drawing.]

A.D. 1853, May 13.—N° 1185.

BARTLETT, ROBERT SMITH.—(*Provisional protection only.*)—Making the needle holders or sockets of sewing machines capable of receiving needles of different sizes, and causing the table or surface through which the needles pass to be moveable, to allow of the same being adjusted to different positions when using needles of different sizes.

[Printed, 4d. No Drawings.]

A.D. 1853, July 14.—N^o 1676.

BARTLEET, ROBERT SMITH.—Relates to sewing machine needles. Consists in manufacturing the stems of such needles, when smaller at one end than the other, by stamping or pressing in dies. Forming the points, grooves, and impressions for the eyes of such needles simultaneously by stamping or pressing in dies. Making needles having points with angular sides, or with lancet points, or with two convex sides with or without cutting edges, and with or without grooves or recesses for the thread. Forming the needles with knobs at the ends. Burnishing the eyes of such needles with wire.

[Printed, &c. Drawing.]

A.D. 1853, July 19.—N^o 1713.

DART, RICHARD, and SILVERWOOD, EDWARD.—“The ‘adaptation of loom machinery to the purposes of embroidery ‘for badges worn by the police, railway officials, and other ‘officers, and which require a succession of figures.’”

“This invention consists in the adaptation of the ‘leases’ and “‘tyres’ of the loom to the production of a series of numbers “to any extent without alteration to the original ‘setting up.’” This is effected by means of mounting the loom for the nine “digits and the 0, so that any number can be taken up and woven “into the fabric when required, thereby removing the great “difficulty which has hitherto always presented itself in weaving “badges for servants or officials requiring to be numbered. A “piece of the garment of the desired size and form is thus woven, “and may then be attached to the same, forming part of it.”

[Printed, &c. No Drawing.]

A.D. 1853, August 12.—N^o 1894.

BARTLEET, ROBERT SMITH.—Relates to various modifications and novel arrangements of parts of apparatus used for sewing where needles or other thread carriers are used (shewn applied to a machine in which a straight needle works vertically in combination with a curved or nearly circular needle moving horizontally); also to means for holding two or more thicknesses of fabric together whilst being sewed.

Consists in improvements in parts for holding straight needles, and adjusting the position of the same.

Applying a gauge to the edge of the fabric in order that the stitches may follow each other in a regular or given line.

Applying an indicator to the instrument which regulates the length of the stitches, to show the length of stitch being produced.

Facilitating the movement of the fabric over the table or bed of the machine by the application of rolling surfaces to the table or bed ; also applying plates of glass thereto for the like purpose.

Making the foot which holds the fabric of glass ; likewise applying an indicator to the foot to assist in obtaining parallel rows of sewing.

Employing clips or holders to hold two or more thicknesses of fabric or material whilst being sewed together, in place of what is called "basting."

Giving the requisite tension to thread as it is drawn off bobbins, spools, or reels, by means of a friction break.

[Printed, 8d. Drawing.]

A.D. 1853, August 15.—N° 1910.

DOUGLASS, ARCHIBALD.—The object of this invention is by mechanical means to imitate as closely as possible the ordinary hand-sewing operation. The needle is pointed at both ends, with two or more eyes at the middle, and has a groove in it to receive the thread and protect it from unnecessary wear. It is held by pairs of fingers or clamps, one pair on each side of the fabric, which are made to advance and recede alternately, and so pass the needle through the fabric. As the needle is passing through, it is received by the pair of fingers or clamps on the opposite side ; and when it has carried the thread through the fabric, the thread is caught by reciprocating, vibrating, or rotating fingers (attached to the end of long arms), which draw it tight in a similar manner to the hand and arm of a seamstress when at work. The fabric or material is placed between a pair of jaws or clamps attached to a table, which is shifted longitudinally each time the thread passes through. In order to "stitch and backstitch," the table is alternately moved twice the length of a stitch forward and then half the same distance backward ; but when "running" a thread, only the simple forward motion is given to the table.

[Printed, 2s. Drawings.]

A.D. 1853, September 10.—N° 2095.

GILBERT, THOMAS WILLIAM.—Improvements in sewing sails and other articles by making sewing machines to move step by step, according to the rapidity of the stitching, while the fabrics are held stationary; for which purpose the machine is supported on a frame of such dimensions as will allow of the extent of movement required, and is made to slide or move in such frame by a ratchet or other step-by-step movement, making a stitch or stitches each time of moving. In order to obtain increased facility for manufacturing sails and other articles where two or more rows of stitches are required, two or more sewing machines are combined and caused to move together. To flatten the stitches, rollers are applied to the sewing machine, and caused to act on and press the rows of stitches as the machine makes its return movement.

[Printed, 1^e. Drawings.]

A.D. 1853, September 14.—N° 2131.

JOHNSON, JOHN HENRY.—(*A communication from Adrienne Elisabeth Figuer and Euphrasie Chérault.*)—(Provisional protection only.)—Sewing machine containing a number of hooked needles fitted side by side in a sliding carrier, at distances apart corresponding with the length of stitch to be made. On the side of the material opposite to that at which the needles enter there is a series of catches, similar to bell cranks, turning loosely on a horizontal wire. When the needle carrier moves forward, it pushes the hooked ends of all the needles simultaneously through the material. A thread, supplied by a bobbin, is laid over these hooks, and passed also round the vertical arms of the catches (the horizontal arms of which may be slightly weighted). The needle carrier being then moved back again, the needles bring the thread along with them, thereby forming a series of loops on the opposite side of the material. Through this series of loops a second thread is passed; and then the loops are released and drawn tight, thus completing the stitching of a length of seam equal to the length of the series of needles by one double stroke of the needle holder.

[Printed, 4^d. No Drawings.]

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A.D. 1853, September 21.—Nº 2187.

NEWTON, ALFRED VINCENT.—(*A communication.*)—The object of the first part of this invention is to form a seam with one thread “by first forming a loop with that portion of the “thread which is carried through the cloth by the needle, and “then forming another loop in like manner at the next perfora-“tion with the needle, which second loop is drawn through the “first loop, and then liberated to complete the stitch.” The second part relates to the mechanism for making this stitch. There is a needle “with a crook in its length back of the eye” and a looping apparatus “to form a loop at each perforation of “the needle, and consequently liberating the previously-formed “loop over the one last formed.” The looper is open to modification and is variously operated. Alternate slack and tension are also given to the thread, by a spring in combination with bridles attached to the frame and to the needle carrier. The cloth is fed by a foot or pad which holds it to the table. Under the third part of the invention a seam is made with two threads, “the first “of which is carried through the cloth at each stitch, and inter-“laced with the second by forming a loop with the second; or “one side of a loop formed with the first, and thus forming a “second loop with the second, which is drawn through the loop “formed with the first thread, and through the first loop formed “with the second thread.” Finally, the inventor claims the use of a needle and looper in combination with an instrument for carrying or guiding the second thread within the range of the looper. Also feeding the cloth by the lateral motion of the needle in combination with the motion of a foot or pad.

[Printed, 1s. 8d. Drawings.]

A.D. 1853, N° 2187.*

NEWTON, ALFRED VINCENT.—(*A communication.*)—Disclaimer and memorandum of alteration to the Specification of Letters Patent, September 21, 1853, No. 2187, filed June 22, 1859. The inventor disclaims such parts as relate to the use of a “foot or pad” for feeding the material and holding it down upon the table.]

[Printed, 4d. No Drawings.]

A.D. 1853, N° 2187.**

NEWTON, ALFRED VINCENT.—Second disclaimer and memorandum of alteration of Letters Patent September 21, 1853, No. 2187, filed by Edward Clark, August 10, 1861.

The assignee states that he has found that "the first part of " the said Invention, which consists in a peculiar construction of " stitch, is not of such practical value as to render it desirable " to retain a special claim therefor; and that the second part of " the Invention, which relates mainly to an arrangement of " mechanism for producing the said stitch, has consequently not " that practical value which would render it prudent to maintain " claims for such arrangement." He therefore disclaims so much of the Specification and Drawings as relate to the first part of the Invention, and also the mechanism described in the Specification as relating to the second part of the Invention, with the exception of the arrangement for giving the " required slack " and tension to the needle thread."

[Printed, &c. No Drawings.]

A.D. 1853, N°. 2187.***

NEWTON, ALFRED VINCENT.—Third disclaimer and memorandum of alterations to the Specification of Letters Patent, September 21, 1853, No. 2187 filed by Edward Clark, June 21, 1864. The assignee disclaims the second part, which relates to a peculiar construction of stitch. He also disclaims the third part, which relates to the machinery for producing the stitch. Thus he is reduced, under the amended Patent, to claiming only the apparatus for giving the required tension and slack to the thread.

[Printed, &c. No Drawings.]

A.D. 1853, October 26.—N° 2473.

HUGHES, EDWARD JOSEPH.—(*A communication.*)—Improvements in the sewing machines described in the Specification of Letters Patent obtained by the present patentee, 10th August 1852, N° 14,256.

1. Method of using two straight needles moving diagonally in needle frames, so as to cross each other at every stitch.
2. Method of working with a straight needle moving vertically and a hooked needle or guide acting upon the thread or threads

horizontally, either using a long thread and a short thread or two short threads.

3. Employment of clamps or apparatus for holding leather or other strong material during the operation of sewing or closing.

4. Using two straight needles, one working vertically and the other horizontally.

[Printed, 1d. Drawings.]

A.D. 1853, November 14.—N° 2638.

ANDERSON, WILLIAM, and MURPHY, ALEXANDER WARK.—(*Provisional protection only.*)—Relates to that class of ornamental fabrics known as "Ayrshire sewed work," used as collars, chemisettes, &c. In this work the muslin or ground fabric has hitherto been white or uncoloured. Now, according to this invention, a black or coloured muslin is employed as the ground fabric, and the sewed or hand-stitched embroidery laid upon its surface is either of black or coloured material alone, or black and white, or any intermediate colour combined. This combination produces a new mourning fabric.

[Printed, 4d. No Drawings.]

A.D. 1853, November 24.—N° 2738.

TOWNSEND, ELMER.—(*A communication from William Butterfield.*)—Improvements in machinery for sewing a chain stitch with a hooked needle, which is made to pass through the cloth or material to be sewed, and to have the thread laid in its hook, so that in ascending it will draw the thread in a doubled or looped state through the cloth and through the previously-formed loop.

[Printed, 8d. Drawing.]

A.D. 1853, November 30.—N° 2790.

JENNINGS, LEWIS.—Formation of a novel kind of tie stitch in the following manner, by means of a needle with an eye near its point, moving vertically, and a hook or finger working in a horizontal direction beneath the fabric:—The needle descends through the cloth to a given distance and then retires, leaving sufficient thread to produce what may be called loop No. 1; and to form this loop (which is a long one) the hook or finger catches and retains the thread. When the needle has risen clear of the cloth,

the latter is moved forward a given distance, and the needle then descends to form the loop No. 2, which is a short one. As the needle ascends the finger moves horizontally, or in the line of the seam, and passes loop No. 1 through No. 2 (which is then tightened), and extends it beyond the spot where loop No. 3 is to be formed. The needle now descends again through the cloth, entering it at such a point (determined by the intermittent forward motion of the cloth) as to leave a loop (No. 3) within the loop No. 1. This loop No. 3, is formed by the hook or finger taking hold of the thread, as was the case with No. 1; and in like manner No. 3 is carried through No. 4, and interlocked with No. 5, which is itself interlocked with No. 7, and so on. Instead of making long and short loops alternately, and an interlocking at every other loop, each loop may be similarly interlocked.

The patentee also describes an improved arrangement of the parts of a sewing machine, designed to produce the stitches described, as well as the common crochet stitch, by means of a needle and looping hook or finger.

[Printed, &c. Drawing.]

A.D. 1853, December 6.—N° 2837.

BERNARD, JULIAN.—Improvements in the general construction and arrangement of machines for stitching or uniting and ornamenting various materials,—the principal features of novelty being the use of a rotatory arm or bracket, working around a fixed centre on the bed plate, for carrying the needle and part of the mechanism which actuates it, whereby the arm and needle may be brought to different positions on the bed plate for effecting different varieties of stitching ; the use of a revolving or sliding bed plate for the like purpose ; the combination in one machine of various kinds of mechanism, parts whereof are specially arranged according to the particular form of stitch required, and work in conjunction with one needle slide or carrier ; placing beneath the needle a plate of glass, with a hole formed in it for the passage of the needle and thread ; making the table and other parts of stitching machines of glass, &c., &c.

Uniting materials by a stitch composed of three distinct threads or filaments, which for ornamental purposes may be of different colours. Two modes of uniting and actuating the threads are described. The first mode of uniting and actuating is as follows :—The first or top thread is passed through the eye of a suit-

able pointed needle, which descends through the material, carrying a portion of the thread in a doubled state with it. The needle is then slowly drawn up, and at the same time the end of a pointed and curved inclined instrument or loop opener (through the point whereof the end of another of the three filaments has been previously introduced) is caused to pass between the needle and a part of the thread, in a direction transverse to the line of stitching. As the inclined instrument advances, it carries with it the second thread in a doubled form or loop, which is enlarged by means of an instrument called a loop expander, when the inclined instrument is drawn back, so that a bobbin or reel carrying the third thread may be passed through the expander and expanded loop in a direction parallel to the line of stitching. The necessary degree of tension is now given to each thread, and the above movements are repeated. The second mode of stitching consists in passing the second and third threads, with their bobbins, entirely through the loop of the first thread in opposite directions, instead of using them in the manner already described for producing the first stitch.

Apparatus for sewing or attaching buttons or similar fastenings to garments or materials, by bringing the holes, or those parts of the button or other fastening through which the needle is to be passed, successively beneath or opposite the point of the needle, and carrying the thread in a doubled or looped form through the holes, and securing the same by looping, whether alone or in combination with one, two, or more threads.

Machine for weaving or stitching the edges of buttonholes and securing or ornamenting the edges of garments or materials by means of a double-pointed needle, with an eye near the centre, which has an up-and-down movement communicated to it, passing in its ascent through the material, but descending through the open space of the buttonhole or outside the edge of the material, the thread which the needle carries being brought over its point in the form of a loop at each ascending movement, by means of two fingers, so that the stitch made in this machine will be similar to the buttonhole stitch produced by hand.

[Printed, 2s. 4d. Drawings.]

A.D. 1853, December 27.—N° 2996.

HUGHES, EDWARD JOSEPH.—(*A communication.*)—1. Various modifications in the construction of sewing-machine needles with

bearded or spring eyes, the principal object being to prevent the thread from slipping out of the eye of the needle, and also to prevent the beard from tearing or catching the fibre of the material sewed.

2. Machine for obtaining a cam motion from the rim of the fly wheel, and sewing with two vertical bearded or hooked needles and one thread, one needle drawing the thread upwards through the material or fabric, and the other drawing the thread downwards in such manner as to produce a stitch similar to that made by hand.

3. Another form of machine for making the above-mentioned stitch by the use of two vertical bearded or hooked needles with improved thread guides and feed motion.

4. Machine for producing a back stitch of various forms with one thread and a single bearded or hooked needle. The needle not only moves up and down, but a lateral motion is given to it at each ascent, so as to cause it to go down in the same place only at every alternate descent. A guide is employed for introducing the thread into the hook of the needle, and a hooked arm for catching the loop of the thread and drawing it entirely through the material on the under side. The cloth or material is shifted by an intermittent feed motion, which alternately moves it in one direction the length of a stitch, and then a shorter distance in the opposite direction. It is stated that by this method of feeding, and the lateral motion of the needle, back stitching or sewing of every description may be accomplished.

5. An improved feed motion applicable to sewing machines generally.

6. Method of using two needles and two thread guides, or one needle and one thread guide. Each needle is formed with a long slot or eye near the point, through which a thread guide or hook passes, whenever the eye of the needle has advanced through the fabric, and draws the thread through the eye. When two needles are used, one needle is placed below and the other above the cloth. Each needle, when in action, moves between two springs (one pair placed below and the other pair above the cloth) which hold the thread whilst the thread guide is taking it through the eye of the needle. The operation of sewing is as follows:—The lower needle rises between its springs and through the cloth until its eye is above the latter, the upper thread guide then catches the thread, which is held by the upper pair of springs, and draws it through

the eye of the needle ; this being accomplished, the needle passes back out of the cloth and from between the lower springs, carrying with it the thread, which is caught and held by the lower springs ; the upper needle now descends between the upper springs and through the cloth, and the thread is drawn through its eye by the lower thread guide ; after which the needle ascends, and, drawing the thread through the cloth, completes the stitch. A needle of the above kind, with its thread guide, may be substituted for the hooked needle and hook or thread guide described under the fourth head of this invention, producing a stitch similar to that made by hand.

[Printed, 1s. 2d. Drawings.]

A.D. 1853, December 31.—N^o 3039.

BERNARD, JULIAN.—Relates partly to improvements on the invention protected by Letters Patent dated December 6, 1853, N^o 2837.

The first improvement refers to a method of stitching described under the second head of the former Specification, and consists in a novel mode of enlarging the loop of the second thread or filament so as to admit the third thread through it.

Producing a peculiar kind of stitch, somewhat similar to that known by the name of "herringbone" (to be used for uniting materials and securing their edges, or for ornamenting the same, and termed the "diamond stitch"), by imparting to the cloth or material an alternate lateral movement in conjunction with a forward movement ; which compound motion will have the effect of presenting the material underneath the needle in such a manner as to produce the peculiar kind of stitch referred to.

Another form of stitch for securing or ornamenting button, lace, or other holes, or the edges of various materials, or securing or uniting materials at their edges by means of one or more threads or filaments ; the thread being brought in a doubled or looped form from one side of the material to the other, so as to overlap the edge, and the needle descending through the loop which is thus turned over. This loop, when two threads are employed, is not obtained from the needle thread, but from a second thread, which is passed through the loop formed in the needle thread under the material or fabric, and then drawn over the edge of the material ; and on the needle again descending, it passes through

the loop so turned over, and through the material, forming a loop under the same, through which another loop of the second thread is passed.

Improved form of stitch for uniting or ornamenting materials similar to the ordinary crochet, chain, or tambour stitch, but not having the same tendency to unravel. This stitch is produced by the use of one or more thread or threads in conjunction with a straight needle and a revolving hooked instrument, the latter taking the loop from the needle, and giving one or more turns or twists to the loop before the needle is reinserted.

Doubling and holding materials for the purpose of hemming or sewing the edges thereof.

Placing or securing on one common bed-plate two or more sets of mechanism, each having independent needle mechanism for sewing or stitching.

[Printed, 10d. Drawings.]

1854.

A.D. 1854, January 3.—N° 17.

BERNARD, JULIAN.—“Improvements in the manufacture of “boots and shoes, part of such improvements being applicable to “the manufacture of garments.”

The first part of this invention relates to the manufacture of boots and shoes in which no particular sewing is described or claimed, nor is machine sewing stated to be used, on the contrary it is expressly stated that either machine or manual work will answer. The second part relates to a cutting-out apparatus in which an endless steel band acts as the knife.

[Printed, 1s. Drawings.]

A.D. 1854, January 10.—N° 57.

TOWNSEND, ELMER.—(*A communication from William Butterfield and Edgar Mantlebury Stevens.*)—Relates to machinery for producing a chain stitch. Instead of the needle being made with a hook like those which draw the thread through the cloth, leather, or other material, it is formed with a notch or recess in its side

(which may be termed a reversed hook) to receive the thread from a thread carrier, and force it down through the material in the form of a loop, and on ascending again, to discharge such loop. This needle works in conjunction with a hook affixed on the end of a revolving shaft, beneath the table on which the material rests. The hook rotates in a plane passing longitudinally through or parallel to the axis of the needle, so as to seize or pass into the loop perpendicularly or thereabouts to the plane of such loop; and as it draws the loop forward, no twisting of the loop is necessary in order to present it to the needle, so that the latter may pass through it on again descending.

The apparatus for holding the material is constructed in such manner as to admit of the material being moved laterally or transversely during its longitudinal movements under the needle.

[Printed, 1s. 4d. Drawings.]

A.D. 1854, January 18.—Nº 119.

GREENSHIELDS, WALTER.—(*Provisional protection only.*)—Improvements in chenille fabrics. This invention relates to the manufacture of ornamented fringes for various purposes. The fringes are woven or manufactured in the ordinary manner, with the exception that yarns of various colours are woven or worked into them, according to the usual system of manufacturing figured or particoloured fabrics in the loom.

This system of producing figured fringes is applicable where figured or particoloured chenille is worked up by a sewing process.

[Printed, 4d. No Drawings.]

A.D. 1854, January 19.—Nº 134.

HUNT, NEHEMIAH.—(*A communication from Christopher Hodgkins.*)—Relates to machinery for performing the operation of sewing by the united action of a needle and shuttle. Consists in an arrangement of mechanism for causing the shuttle driver to have a backward movement for a short distance and an interval of rest immediately after each forward movement; the object being to open the space between the heel of the shuttle and the end of the shuttle recess of the driver, so as to facilitate the passage of the loop off the heel of the shuttle.

Also, an improved mode of constructing and operating the brake or clamp contrivance by which the feeding wheel is actuated.

[Printed, 10d. Drawing.]

A.D. 1854, January 21.—N° 155.

EDWARDS, CHARLES JOHN.—Manufacturing flat bands for driving machinery, by folding or doubling bands of leather, so as to bring the edges together at the centre or other convenient part of the side of the band, and then securing them thereto by cementing, stitching, and rivetting.

Making round bands, by turning up a strip or strips of leather to form a tube, in which a cord, rope, or round band, prepared with an elastic cement, is placed; then cementing the edges and interior surface of the leather together; and, when the band is finished, giving a slight twist to it, so as to make the joint extend helically around the band.

[Printed, 6d. Drawing.]

A.D. 1854, January 23.—N° 158.

DARLING, WILLIAM.—(*A communication.*) — (*Letters Patent void for want of Final Specification.*)—Improvements in the general combination and arrangement of sewing machinery in which a circular shuttle, suitably formed to receive a circular metallic bobbin, is employed, in conjunction with a curved needle carried by a vibrating bar.

[Printed, 4d. No Drawings.]

A.D. 1854, January 31.—N° 241.

MEEUS, PIERRE JOSEPH.—Gilding and coating with metals, by means of heat and pressure, articles composed of or coated with gums, gutta percha, caoutchouc, or mixtures or combinations of the same or substances analogous thereto.

Applying the invention to the imitation of embroidery and embossed or figured goods of all descriptions on yielding fabrics and bodies, and the production of ribbons, trimmings, braid, gold or silver lace, fringes, and articles of the like description in gold, silver, platinum, or other metals, either plain or coloured, tinted, or shaded, so as to resemble mother-of-pearl, or otherwise.

[Printed, 4d. No Drawings.]

A.D. 1854, February 3.—N° 274.

HOWARD, EDWARD, and DAVIS, DAVID PORTER.—(*A communication from Sylvester H. Roper.*)—Improvements in sewing machinery, calculated to produce back-stitch sewing, or the ordinary running stitch, by means of two straight needles, which pass through the fabric in opposite directions alternately, and are supplied with short pieces of thread.

1. The use of a groove, tube, or thread passage, in combination with a hooked needle made to draw the thread into such passage, the object being to keep the thread from springing back and becoming entangled.
2. Improved manner of applying the closing slide to a hooked needle; that is, by making the shank of the needle tubular, and causing the closing slide to work therein.
3. Combining with each of the hooked needles of the machine (there being two such needles) two thread-benders, or contrivances for bending the thread in two directions, and across the needle and into the opening hook of the needle.
4. Combining a set of lips or nippers with the thread-benders to seize the thread during the formation of each stitch, and draw the stitch closely into the cloth.
5. Combining a stationary knife with the cloth presser and feeding apparatus to separate the piece of thread used in sewing from a roll of thread wound on a spool.
6. Mode of connecting two of the connecting rods of the machine with a crank pin, viz., by projections from said rod and a covering tube or ferrule made to encompass them and the crank pin.

[Printed, 1s. 4d. Drawings.]

A.D. 1854, February 3.—N° 275.

MEEUS, PIERRE JOSEPH.—Manufacturing threads of gutta percha, and ornamenting the same. Employing such threads in the manufacture of stuffs and fabrics, for the purpose of rendering them waterproof and of producing therein stripes and patterns of all kinds. Also using the gutta percha threads in embroidery by hand in net, lace, and other descriptions of fancy work, and in the production of patterns on fabrics in the jacquard loom, and for *making outlines in embroidery, &c.*

[Printed, 4d. No Drawings.]

A.D. 1854, March 1.—N° 499.

GOTTUNG, JOHN BAPTISTE.—(*A communication.*)—Taking the feathers of the peacock and other birds, splitting the stems thereof into strips about $\frac{1}{16}$ of an inch broad, paring away the pithy portion, and working or stitching the strips by needles or machinery through leather, so as to produce embroidered work suitable for harness, table mats, shoes, slippers, &c.

[Printed, 42. No Drawings.]

A.D. 1854, March 13.—N° 607.

JOHNSON, JOHN HENRY.—(*A communication from Adrienne Elisabeth Figuier and Euphrasie Chérault.*)—(*Provisional protection only.*)—Sewing machine containing a number of hooked needles fitted side by side in a sliding carrier, at distances apart corresponding with the length of stitch to be made. On the side of the material opposite to that at which the needles enter there is a series of catches, similar to bell cranks, turning loosely on a horizontal wire. When the needle carrier moves forward, it pushes the hooked ends of all the needles simultaneously through the material. A thread, supplied by a bobbin, is laid over these hooks, and passed also round the vertical arms of the catches (the horizontal arms of which may be slightly weighted). The needle carrier being then moved back again, the needles bring the thread along with them, thereby forming a series of loops on the opposite side of the material. Through this series of loops a second thread is passed; and then the loops are released and drawn tight, thus completing the stitching of a length of seam equal to the length of the series of needles by one double stroke of the needle holder.

[Printed, 42. No Drawings.]

A.D. 1854, March 20.—N° 664.

BROOMAN, RICHARD ARCHIBALD.—(*A communication.*)—(*Provisional protection only.*)—Improvements in sewing machines.

1. So constructing and applying the friction brake upon the thread that, in rapid work on harsh materials, the breaking of the thread at the period of greatest strain is obviated.
2. Improving the form of the needle, whereby, in sewing leather and similar materials, the hole is so made that the process of finish-

ing the stitch is greatly facilitated. This is effected by enlarging that portion of the needle which, having entered the material, is to retire from it before the pull upon the last loop is commenced.

3. So forming the bed or plate on which the work rests that, in turning the work, in order to sew in a curve, the stitch may be as perfectly formed as when sewing in a right line.

[Printed, 4d. No Drawings.]

A.D. 1854, March 30.—N° 729.

TOWNSEND, ELMER.—(*A communication from Alfred Swingle.*)

—Machine for performing the operation of sewing with two threads. One thread is passed through an eye near the point of an upright needle, which carries it upwards through the cloth, so as to form a loop in the same manner as in machines in which a needle and shuttle are used. The other or binding thread is employed in short lengths, and is combined with the first thread by the use of a vibrating hook and a vertical forked thread carrier, to which an intermittent rotary motion is communicated. When the loop has been formed by the ascent of the needle, the hook passes through, and, seizing the binding thread (which extends upwards from the cloth, and is held between the rearmost leg of the thread carrier, and a spring attached thereto), draws it through the loop, and through the space between the foremost leg of the carrier and its spring. When the thread is drawn through the carrier, it is left supported by the said leg and its spring, and while thus supported, and during part of the descent of the needle, a semi-rotative movement of the thread carrier takes place, so as again to present the thread in a proper position to be seized by the hook when it advances through the loop formed by the next ascent of the needle. By the intermittent rotary motion of the forked thread carrier the upper thread is wound around the lower thread during the operation of sewing, and in this respect the sewing differs from that produced by other machines.

[Printed, 10d. Drawing.]

A.D. 1854, April 1.—N° 750.

NEWTON, ALFRED VINCENT.—(*A communication.*)—Improvements in sewing machinery.

1. Keeping the shuttle in contact with the face of the shuttle race by means of magnetism or magnetic attraction, without the use of springs or other device.

2. Employing a curved hinged cap for confining the cop of the shuttle; which cop is inserted without a spindle or spooler. This arrangement admits of the thread being drawn from the inside of the cop; and thus a uniform draught on the cop thread, as it is drawn or paid out from the shuttle, may be obtained.

3. Forming, in the face of the shuttle, a slot, through which a stud in the shuttle-race may project, for the purpose of drawing the thread from the shuttle bobbin, so that there may be a uniform tension on the shuttle thread when drawing up the stitch.

4. Mode of regulating the tension of the needle thread as it passes from the spool to the needle.

5. Use of an arrangement of double-acting pawls and ratchet wheel for feeding forward the cloth when the needle is approaching the cloth.

6. Construction and use of a nipper spring, jointed to the guide of the needle bar; which nipper spring seizes the needle thread when it is slack, and carries it sidewise or horizontally away from the needle, whereby the thread is protected from being broken or cut by the needle.

[Printed, &c. Drawings.]

A.D. 1854, April 6.—N° 794.

BELLFORD, AUGUSTE EDOUARD LORADOUX.—(*A communication from Messrs. Grover and Baker.*)—Improvements in sewing machines, chiefly applicable to the machinery which formed the subject of Letters Patent N° 14,328.

1. Arrangement of machinery for making the longitudinal seams on cylindrical or conical bag or hose-like articles, such as the legs of boots, trousers, &c.

2. Modifying the machine to form transversal seams on cylindrical articles.

3. Guide for binding the fabric or material,

4. Method of working a shuttle or thread carrier.

5. Regulating the tension to be given to the threads.

6. Feeding and holding fabrics during the operation of sewing.

7. Tubular thread carrier or tubular shuttle.

8. Single thread stitch, formed by passing a loop of the thread through the material, holding it till the needle has formed a second loop, putting the first through the second loop, and carrying a

third loop through the first. Then the third loop is put through a fourth, and a fifth loop is conducted through the third, and so on.

9. Using lubricating matter for protecting the threads from breakage whilst sewing, and for preserving and improving the seam.

10. Feeding and holding the fabric.

11. Mode of mounting the bobbin to regulate the delivery of the thread.

12. Apparatus for cording and binding articles.

13, 14. Modes of feeding fabrics.

15. Giving a periodical lateral motion to the surface by which the material is fed, in order to form different kinds of stitches.

16. Moving and directing heavy or unwieldy pieces of material by means of an endless chain carrying the said material.

17. Making lap or flat seams by means of a clamp consisting of two pieces or jaws, between which the two pieces of material are secured,—the jaws of the clamp having a slot for the passage of the needle.

18. Directing or guiding materials, such as leather, by retaining a point or points in a furrow made in the material along the line on which it is intended to be sewed, or by causing the fabric to rest against one or more points whilst advancing.

[Printed, 10d. Drawing.]

A.D. 1854, April 6.—N° 800.

BERNARD, JULIAN.—Production of a novel kind of stitch composed of one thread, which is so tied or knotted in the material by suitable instruments, as entirely to prevent it from unravelling should the thread break at any part of the seam. A knot or tie may be formed upon each loop, or every alternate loop may be knotted, or one loop may be passed through one or several other loops.

Application of a break or other suitable mechanical contrivance to sewing machines, to prevent such machines being reversed or turned the wrong way.

Use of a spring arm for taking up the slack of the machine for making buttonholes, described in the Specification of Letters Patent, dated December 6, 1853, N° 2837.

Uniting and ornamenting materials by a three-thread stitch, produced by interlooping the three threads together, so as to form an ornamental braiding on one side of the material.

[Printed, 1s. 4d. Drawings.]

A.D. 1854, April 15.—N^o 879.

TIRET, GEORGES LOUIS FÉLIX.—“An improved canvas for “embroidering.”

The object of this invention is to do away with the figured pattern paper now in use for reading off the design. “The “improved canvas is formed by the crossing of warp and weft “threads placed in the same manner as the canvas now used for “embroidery; besides the common warp, however, there is placed “another additional one, which is formed of much finer threads, “and worked by a jacquard machine. This additional warp is “shot across with the figuring weft, which is thus bound with “the canvas warp on the back and face of the fabric.”

[Printed, 10d. Drawings.]

A.D. 1854, April 18.—N^o 890.

BERNARD, JULIAN.—Mode of paring, rounding, or finishing the heels and soles of boots and shoes by machinery instead of ^{*}by hand labour.

Placing rims or borders around the dies employed for shaping the soles of boots and shoes.

Mode of stitching the soles to the uppers of boots and shoes, and stitching various other parts of boots and shoes, by means of two needles, working from the outside or on one side of the boot or shoe. Each needle carries a thread, passed through an eye near its point; and, in sewing, each thread is secured alternately by a loop of the other. The two needles are caused to work in such manner that their points will pass each other and enter between each needle and its respective thread alternately; so that when one needle is inserted in the material, before it is withdrawn the other needle is caused to descend and insert its point, with part of its thread in the form of a loop, between the first needle and a portion of its thread, also in the form of a loop; the first needle is now withdrawn, leaving a loop of its thread around the second needle, and is again inserted, passing in its descent between the second needle and part of its thread, the loop of the first thread being

still around the second needle, which at this part of the operation is withdrawn; and these movements are repeated until the part is stitched. This mode of stitching is applicable to other articles.

Improvements in lasts, and machinery for lasting or mounting the uppers on the last and inner soles of boots and shoes.

[Printed, 1s. Drawings.]

A.D. 1854, April 18.—N° 891.

BERNARD, JULIAN.—Stitching any suitable material with two threads in the manner explained in the preceding description of N° 890, as relating to boots and shoes.

Mode of tightening the stitch.

Arrangements for actuating the straight or curved needles of stitching machines, and inserting such needles into and through the material.

“ Placing the glass which covers and presses upon the material “ directly where the needle acts in the end of a tube or circular “ part; which tube moves upon the lower part of the arm of the “ machine and forms its socket, upon which it slides up or down, “ as required.”

Combining stitching machines with ornamental tables or other articles of furniture in such manner as to conceal such machines when not required for use.

Placing in such tables or articles of furniture self-acting mechanism, in conjunction with stitching machines, for the purpose of imparting motion to the same.

[Printed, 1s. Drawings.]

A.D. 1854, May 6.—N° 1024.

BERNARD, JULIAN.—Mode of feeding the material to be stitched or ornamented, so as to present it to the needle or needles at the proper time and place.

Method of securing the needle in the rod or slide which carries it.

Making the bed plate or table and other parts of sewing machines of marble, china, porcelain, stone, earthenware, or stone ware.

Causing the same machine or parts of the same machine to perform different operations, or to act at different parts of a common bed plate, by making the vertical needle with its rod or holder,

and some of the parts immediately connected therewith, capable of moving or travelling in a lateral direction.

Employing two endless bands (travelling side by side at a short distance apart) for giving motion to the material to be operated upon,—the needle working in the space between the two bands.

[Printed, 6d. Drawing.]

A.D. 1854, May 23.—N° 1152.

LAWSON, JOHN.—Manufacturing cut-piled fabrics by attaching successive rows of suitable lengths of yarn to a woven fabric by the aid of a sewing machine, so as to obtain a pile on the surface of such woven fabric.

[Printed, 4d. No Drawings.]

A.D. 1854, June 9.—N° 1279.

BERNARD, JULIAN.—Mode of passing one thread over another in the form of a loop, by enlarging the loop sufficiently to pass over a reel, bobbin, or holder, containing another thread, and held between two fingers or levers, which are made to release their hold of the bobbin alternately by means of a cam.

Improvements on the machine for making or securing the edges of buttonholes, described in the Specification of Letters Patent dated December 6, 1853, N° 2837, consisting in an arrangement for carrying the thread over the edge of the material without passing behind the needle, so that, instead of forming the “button-hole stitch,” it will merely pass through and overlap the edge of the material, producing what is generally called the “over-cast” “stitch.” Also in arrangements for taking up the slack of the thread; ensuring a perfect stitch; discontinuing the travelling action of the material at pleasure; and causing the needle and parts connected with it to travel while the material remains stationary.

[Printed 10d. Drawing.]

A.D. 1854, June 17.—N° 1324.

HOLLOWAY, GEORGE.—“Improvements in sewing and “embroidering machines.”

The invention relates, firstly, to effecting the tension by “passing the thread as it comes from the bobbin around or over “a wire, twisted or coiled up to form a spring, which is secured

“ at one end to the framing of the machine, and will yield to the
“ drag of the thread, and prevent it from breaking, when from any
“ cause too great a drag is put upon the thread, and yet ensure
“ a good tight stitch.”

Secondly, as thus described by the inventor, “to certain
“ details which will permit of the ready adjustment in that
“ class of sewing machines known best as the Lancaster sewing
“ machines of the circular needle, and will otherwise ensure the
“ better working of such machines. To prevent the rotating
“ cam, by which the bell crank levers that work the vertical and
“ circular needles are rocked, acting when worn like tappets on
“ the bowles of these levers, and thereby giving an undue amount
“ of motion to the needles, I keep the bowles constantly in con-
“ tact with their respective cam surfaces, by means of a spring
“ applied to the levers, and make them always follow the in-
“ equalities of those surfaces. For facilitating the adjustment of
“ the circular needle, and preventing it from working round into
“ contact with the vertical needle, and being consequently in-
“ jured, I provide a means of giving a delicate endway adjust-
“ ment to the cam, which imparts through the segment rack lever,
“ an axial motion to the circular needle.”

[Printed, 10d. Drawing.]

A.D. 1854, June 20.—N° 1351.

CHITTENDEN, GEORGE R.—(*A communication.*)—Application
to sewing machines of apparatus for folding bindings for the edges
of hats and other articles, and for holding such bindings correctly
during the operation of sewing; likewise for folding the edges or
selvages of fabrics for the purpose of hemming the same, and, when
desired, introducing cords into the hems or folded edges; and
also for holding and regulating the letting off of the thread used.

[Printed, 1s. 4d. Drawings.]

A.D. 1854, June 30.—N° 1431.

HUGHES, EDWARD JOSEPH.—(*A communication.*)—1. Machine
for sewing by means of a straight hooked needle, alternately descending
and ascending through the cloth and working in combination
with a circular case, containing the spool of thread, and furnished
with a hook on its periphery,—such case turning once round for every
stitch made. The needle, descending through the cloth, receives

the thread in its hook and draws it up through the cloth in the form of a loop ; the fabric is then shifted the length of a stitch, and the needle again descends, carrying with it the loop, which, on being released by the needle, is caught by the hook of the needle case and carried round therewith ; after this, a fresh portion of the thread is placed in the hook of the needle, which then carries it up through the cloth in the form of a loop, and at the same time draws the previous stitch close and firm.

2. Similar arrangement of parts (with certain additions) for producing a stitch resembling that above described, except that each loop has a twist in it on the surface of the fabric ; and by this form of stitch the thread is not only tied or fastened in the material, but is also tied in itself, so that if the fabric were removed from the thread each stitch would form a knot.

3. Producing another form of stitch by a like arrangement of parts. The needle descends through the cloth to receive the thread, which it carries upwards in the form of a loop ; the cloth being shifted the extent of a stitch, the needle again descends with the loop, which is taken therefrom by the hook of the bobbin case and carried partly round such case, whilst the needle, without the thread, rises out of the cloth, which is moved along sufficiently far for another stitch ; the loop is then carried round the bobbin case, and the needle descends to receive the thread, which it carries upwards through the cloth in the form of a loop ; and the cloth being moved onward the length of a stitch, the needle descends as before with the loop. This stitch may be varied and adapted to different kinds of work by giving a lateral motion to the needle.

4. Using two needles (having an eye near the point), two threads, and two hooks or catches, so as to form a stitch by the needles passing each thread from the opposite sides of the fabric or material in diagonal directions, each needle thus passing its thread through a loop formed by the other.

5. Method of sewing cloth or other material with one thread, two needles with long eyes or spring eyes, and two thread guides to carry threads through the eyes of the needles, producing a back stitch.

6. Machine for sewing with one thread and spring-eyed needle, and a hook and thread guide to carry the thread through the eye of the needle, producing a back stitch similar to hand sewing.

7. Modification of the preceding machine, in order to sew or work buttonholes by giving a lateral movement to the needle.

8. Sewing two parallel seams at the same time by one machine, by causing two needles to pass the thread or threads for each seam through the material simultaneously, and securing the loops and guiding the threads in such manner that the movements necessary for forming one seam may be made available for producing two seams at the same time. The needles by which the threads are passed or drawn through the material are hooked, and work in combination with two pointed needles or awls, provided for the purpose of piercing leather or other strong material at the points where the hooked needles are to pass through the same.

9. Method of taking up the slack of the thread.

[Printed, 1s. 10d. Drawings.]

A.D. 1854, July 3.—N° 1451.

GREENSHIELDS, WALTER.—Relates to the manufacture or working up of particoloured chenille into fringes or trimming details, in such manner that the fringes will present symmetrical coloured patterns or regular ornamental designs or devices upon their faces. The improved fringe, which is designated the “orné “ chenille fringe,” is produced by using particoloured chenille either as warp or weft;—the process of weaving being conducted according to the usual system of manufacturing figured or parti-coloured fabrics in the loom.

This system of producing figured fringes is applicable where figured or particoloured chenille is worked up by a sewing process.

[Printed, 4d. No Drawings.]

A.D. 1854, July 6.—N° 1482.

AVERY, OTIS.—Making a tambour, locked, embroidery, or chain stitch in cloth or leather, with a single thread, by the action of two needles, one of which has an eye near the point, and the other is a “split or loop-holding needle.” The split needle works on the under side of the fabric to be sewed, moving in the same vertical plane, but at an obtuse angle to the upper or eye-pointed needle. The eye-pointed needle carries the thread through the fabric or material, then the split needle passes between the eye-pointed needle and its thread to or through the fabric, and holds the loop close to the cloth until the eye-pointed needle has been withdrawn and again passed through the cloth and through

the loop held by the split needle, when the latter is in its turn withdrawn.

Several varieties of the split needle are described.

[Printed, &c. Drawing.]

A.D. 1854, September 11.—N° 1980.

SZONTAGH, SAMUEL.—Relates to sewing machines in which a shuttle is employed in combination with a needle for performing the operation of sewing.

1. Making the needle used for sewing leather with a flat and broad point, and placing the said needle in such position that the broad and flat part thereof makes an angle of about 45° with the line of the thread which passes through the eye, for the purpose of preventing the holes formed by the needle from cutting the thread of the stitch last made.

2. Applying a magnet to the shuttle-box of sewing machines for keeping the shuttle in close contact with that part of the shuttle box against which it slides, and thus ensuring more perfect contact than by the use of springs, as commonly practised.

[Printed, &c. Drawing.]

A.D. 1854, September 20.—N° 2035.

BELLFORD, AUGUSTE EDOUARD LORADOUX.—(*A communication.*)—Relates to that kind of sewing machine which forms the stitch by the interlacing of two threads, one being passed through the cloth by a needle, and left protruding in the form of a loop, and the other thread being carried through such loop by a shuttle or its equivalent.

1. Giving the cloth or the needle a movement laterally to the direction of the line of sewing between the successive interlacings of the needle and shuttle threads, for the purpose of producing the buttonhole, whip, and herringbone, or such other kinds of stitches as may be produced by such movements.

2. Employing a curved needle, or its equivalent, to enter every loop that is formed at the edge of the buttonhole, and to retain the same during the next interlacing of the threads in the cloth, and until the sewing needle enters it in its next movement past the said edge, in order that every loop formed at the edge may be clasped by its predecessor.

3. Arranging the feed mechanism to give the cloth one movement in the direction of the line of sewing for every two operations of the needle and shuttle in working the buttonhole stitch, for the purpose of laying the visible parts of the threads parallel to each other, and avoiding the zigzag appearance that would be produced by feeding after every single operation.

4. Causing the instantaneous stoppage of the feed or movement of the cloth in the direction of the line of sewing when the needle thread breaks or the loop is otherwise prevented from being formed or drawn tight.

5. Drawing the shuttle and needle threads in opposition to each other in tightening the stitch, so that the interlacing of the threads may take place as nearly as possible in the centre of the cloth, and the shuttle thread may be prevented from drawing through to the upper surface of the cloth, as is frequently the case when that thread is only subjected to a uniform tension throughout the whole operation, while the needle thread receives an extra degree of tension at the proper time for tightening.

6. Mode of arranging the mechanism by which the shuttle is driven, whereby great facility is afforded for adjusting it longitudinally, so that, without receiving a motion of greater length than is necessary to carry it through the loop, its movements may commence and terminate at such points that it cannot fail to enter and pass properly through the loop.

[Printed, 10d. Drawings.]

A.D. 1854, September 29.—N° 2094.

SNEATH, WALTER.—Employment in a sewing machine of a single needle carrying a single thread in an eye near its point; the needle carries the thread through the fabric or material, and, on receding, forms a loop, which is caught by a hook; the fabric being moved the length of a stitch, the needle again descends, carrying a second loop through the first; then the hook releases the first loop, and, catching the second loop, holds it until the fabric is again moved, and the needle returns.

[Printed, 1s. Drawings.]

A.D. 1854, October 19.—N° 2236.

MASON, SAMUEL, and BEEBY, WILLIAM.—“ Certain improvements in the manufacture of coverings for the human leg and foot.”

1. Production of a blocked "upper leather."
2. Securing the "upper" to the "insole" of boots, shoes, and goloshes by double sewing, or, in some cases, by the use of screws, rivets, pegs, or cement, in addition to the ordinary sewing.
3. Obtaining an elastic waist to the common "outsole" of boots and shoes without any joining.
4. Inserting an elastic gusset in the tongue or instep-piece of shoes or boots called the Grecian or Albert cut.
5. Attaching trousers or body covering to shoes or boots in such manner that they form one article of dress.
6. Blocking out of one piece of leather or cloth a seamless leg and instep-piece to be made into gaiters or riding leggings.

[Printed, 10d. Drawing.]

A.D. 1854, October 21.—N° 2244.

BERNARD, JULIAN.—(*Provisional protection only.*)—1. Balancing, or nearly so, the arm, slide, or lever which actuates the needle or needles of stitching machines, whether such arms actuate the needle or needles directly or otherwise.

2. Imparting a lateral motion to arms for actuating the needles of stitching machines.

3. Attaching or connecting one or both of the jaw pressers or arms for feeding or travelling the material to the arm which actuates the needle or needles.

4. Mode of imparting motion to the jaw or feeder.

5. Use of a slotted lever, cam, or slide in connexion with a pin and roller attached to the arm that carries the needle.

6. Moving or travelling stitching machines upwards or laterally in the case, stand, or table which may contain them.

7. Fly wheel for stitching machines, so constructed as to enable the operator to work the machine either by hand or power at discretion.

8. Roughening or making a number of circumferential grooves in the bed plate of the machine, or that part on which the material is pressed. Also, indenting circumferential grooves in the jaws of the pressers or travellers.

[Printed, 6d. Drawing.]

A.D. 1854, December 13.—N° 2618.

BELLFORD, AUGUSTE EDOUARD LORADOUX (*a communication*).—Sewing machinery in which two threads are employed to form

the stitch, one thread being carried through the cloth and left protruding in the form of a loop to receive the other thread. The stitch formed is that known as the "interlocked stitch," and is the same as that produced in sewing machines by the operations of a needle and shuttle. This invention consists chiefly in substituting for the shuttle a thread case to carry the locking thread, such case being so arranged relatively to the line of motion of the needle, that, instead of requiring, like the shuttle, a movement of its own to carry the locking thread through the loop in the needle thread, the loop is drawn over it by the withdrawal of the needle, by which means the sewing machinery is much simplified.

The invention further consists in certain arrangements and modes of operating the several parts of the machine for the purpose of obtaining the above result.

[Printed, 10*d.* Drawing.]

1855.

A.D. 1855, January 11.—N^o 75.

TOWNSEND, ELMER (*a communication from Alfred Swingle*).—Relates to that class of machinery for sewing cloth, leather, or other material in which a hooked needle ascends through a hole in the material produced by an awl or punch, and catching the thread presented to it by a guide or carrier, draws such thread in the form of a loop through the material and through the previously-formed loop, which is thus released from the stem of the needle, each successive loop remaining on the stem until it is released by the needle descending in order to draw the loop through it. Consists in certain arrangements of parts for feeding the material and holding the same during the operation of sewing; for communicating up-and-down, reciprocating, semi-rotary, and rotary movements to the needle; and for producing a proper and uniform tension of the thread when a waxed thread is employed.

[Printed, 1*s. 4d.* Drawings.]

A.D. 1855, February 21.—N^o 376.

KIDD, JOSHUA.—Constructing sewing machines in such manner as to render the same capable of producing the "chain stitch"

and the "double or cross chain stitch" by simply changing the needle or thread carrier. The principal operating parts consist of a straight needle (formed with an eye to receive a thread), descending at regular intervals through the fabric or material, and working in combination with a needle or thread-carrier and appendages, placed beneath the bed or table of the machine, and moving in a horizontal direction. In making the cross chain stitch, the thread passed by the upper needle through the fabric is interlooped with a thread carried by the lower needle; but when a single chain stitch is required, the second thread is dispensed with, and the lower needle simply takes the loop formed by the descent of the upper needle, and places it in such a position that the upper needle, in its next descent, will carry a new loop through it. The lower needle and appendages are constructed and arranged in various ways.

The invention also includes certain methods of feeding the fabric and thread, and regulating the stitch.

[Printed, 1s. 4d. Drawings.]

A.D. 1855, February 28.—N° 447.

RITCHIE, GEORGE.—(*Provisional protection only.*)—"This invention consists of producing double fabrics, either by the act of weaving, as is well understood, or by sewing two fabrics together at intervals, in such manner that each double fabric may consist of numerous narrow parallel or oblong hollow compartments, which, being filled with ground or pulverized cork, are to be made up into linings for articles of dress; by which means of manufacture peculiar and very useful linings for articles of dress are obtained."

[Printed, 4d. No Drawings.]

A.D. 1855, March 5.—N° 491.

FOWLE, CHARLES LOWELL—(*A communication from Edwin A. Forbush.*)—(*Provisional protection only.*)—"Improvements in machinery for sewing cloth, leather, or other material."

The invention consists, firstly, in "drawing the needle through the cloth or material with a set of pincers, which grasp the thread between the work and the needle, and draw such thread into the cloth The thread is drawn through the work with a proper tension," by means of apparatus which accommodates itself to the length of the thread.

Secondly, "in holding the needle and drawing it through the work, and turning it around end for end or in a semicircle, in order to present its point again towards the work, so that it may be passed through the work in an opposite direction point forwards, thus allowing of the use of an ordinary needle."

Thirdly, in a combination of machinery for taking up the thread and preventing its entanglement (when the needle is moved towards the work), consisting of spring nippers and a mechanism for preventing the weight of such machinery from being thrown upon the thread so as to break the needle or derange it."

The machine is adapted to sew leather with two needles, passed in opposite directions.

[Printed, 4d. No Drawings.]

A.D. 1855, March 10.—Nº 544.

HEAVEN, CHARLES.—Relates to machinery used for embroidering fabrics, and consists in the application thereto of a series of bent blades or instruments with inclined edges (one to each needle), which are actuated in such manner that, in place of the needles going simply through and through the fabric to be embroidered, each thread is formed into a loop, through which the needle passes, so as to form, when the thread is tightened, a stitch similar to the button or loop-hole stitch.

[Printed, 10d. Drawing.]

A.D. 1855, March 31.—Nº 719.

SURGEY, JOHN BAILEY.—Constructing instruments for threading needles, with a divided guide or funnel for the passage of the thread; which divided guide or funnel is capable of being closed during the operation of threading the needle, and readily opened to allow of the escape of the thread.

[Printed, 8d. Drawing.]

A.D. 1855, May 8.—Nº 1026.

FOXWELL, DANIEL.—Relates to that class of sewing machines in which a straight needle works vertically in combination with a circular needle moving horizontally.

Consists in giving the requisite tension to the threads by conducting the same through or between perforated plates or rods.

Overcoming the back-lash of the crank which works the vertical needle by the use of a spring.

Fixing the vertical needle to the head of a pin or spindle working in a socket furnished with a set screw, so that the needle may be adjusted with great nicety.

Using a lever, acted upon by a cam and a spring, to press against the vertical needle and cause the loop to form on the proper side, so that the circular needle may enter it with greater certainty.

Preventing any back-lash of the circular needle, by causing a strong spring to act on the cranked segment which works it.

Applying an additional spring to the feeding apparatus on the pulling side.

Causing the end of the main shaft to work against a pointed centre screw.

Using two pointed centres for the spindle of the cranked segment, capable of being adjusted by a screw.

[Printed, &c. Drawing.]

A.D. 1855, May 10.—N° 1051.

FORBUSH, EDWIN A.—Arrangement of mechanism for sewing leather, cloth, &c. The work is held by a pair of clamps mounted on a carriage, which traverses across the machine upon a pair of rails. On each side of such rails, and at right angles thereto, there is another pair of rails, between or upon which a compound carriage travels. Each carriage is provided with an awl for piercing the leather or cloth, and a needle (of the ordinary form) for passing the thread through the pierced holes; and the carriages are so constructed that when they have advanced sufficiently near the work to introduce the needles into the holes last pierced, the upper portions or needle carriages stop, but the lower or awl carriages still advance to pierce the work. While this is taking place, the clamp arrangements employed to hold the needles release their grip upon their respective needles, which are driven through the work by suitable "propellers;" the needle clamps then severally take hold of the protruded points of the needles, so that when the carriages retreat they will have effected an exchange of needles; and on the next advance of the carriages the needle clamps are caused to move in such manner as to turn the needles end for end, in order to present their points to the work. After the needles have been drawn a short distance through the leather

or cloth, the threads which they have respectively brought through are seized by nippers or pincers, which stand out from the front of the carriages, and by this means the threads are drawn tight into the leather or cloth. At each side of the work there is a pair of sliding spring nippers for taking up the slack of the thread and preventing it becoming entangled during the advance of the carriages.

The above arrangement of mechanism, although intended to pass two threads through each stitch-hole in opposite directions at the same time, may be used to sew with but one thread.

[Printed, 1s. 10d. Drawings.]

A.D. 1855, May 28.—N° 1217.

BELLFORD, AUGUSTE EDOUARD LORADOUX (*a communication*).—(*Provisional protection only.*)—Improvements in sewing machines, consisting, first, in a peculiar kind of looper, working in combination with a needle to form a stitch with a single thread; secondly, in a method of operating the needle in connexion with the looper, to throw the thread over its point; thirdly, in mechanical means for carrying out the second improvement; and, fourthly, in a feed motion for moving the cloth in the line of the seam.

The needle has an eye near its point to receive the thread, which it carries downwards through the cloth to form a loop on the under side near the point of the looper, such looper consisting of a piece of metal, which is straight, except at one end, where it is slightly curved and pointed; and it is placed parallel to the line of motion of the needle, and below the table or bed of the machine, with the point downwards. Immediately that the needle commences to rise and leave the thread slack it also begins to turn on its axis towards the point of the looper, and as it continues to ascend it draws the thread in the form of a loop over the looper, which, without detaining the loop, merely keeps it open and in position for the needle to pass through in its next descent. When the needle again descends, the loop is drawn over and off the looper by the consequent tension of the thread.

[Printed, 4d. No Drawings.]

A.D. 1855, August 3.—N° 1754.

MEYERSTEIN, WILLIAM.—(*Provisional protection only.*)—*Machine for sewing by means of a straight needle, worked up*

and down by a vibrating lever, and acting in combination with a "sledge" or shuttle, which travels in a horizontal circular course, the straight needle and sledge or shuttle each carrying a thread. The material to be sewed is advanced between the successive movements of the needle by feeding apparatus capable of being adjusted by turning a screw, so as to vary the length of the stitches at pleasure.

[Printed, 8d. Drawing.]

A.D. 1855, August 3.—N° 1767.

RICHARDSON, ROBERT, and GREENSHIELDS, WALTER.—
" This invention relates to the application and use of particolored
" or figured chenille, composed of wool, wool and silk, or of silk
" alone or entirely with the gut, in the usual manner, so as when
" worked up into finished fabrics, such fabrics shall present
" symmetrical colored patterns or regular ornamental designs or
" devices upon their faces.

" This chenille material is or may be woven or manufactured in
" the usual manner,—yarns or threads of various colors, how-
" ever, being woven or worked into it, according to the system
" generally adopted in the manufacture of particolored goods.
" Such particolored chenille material is applicable under various
" forms; it may be drawn through net, canvass, or other open-
" ground fabrics, or it may be sewn or otherwise attached to the
" surface of such fabrics, or upon cloth and other close fabrics."

[Printed, 8d. Drawing.]

A.D. 1855, August 10.—N° 1809.

HEAVEN, ALFRED.—Piercing, puncturing, or cutting holes of various shapes in fabrics by means of stilettos or punches, applied to the ordinary embroidering machines, or by other means, previous to performing the operation of embroidering or sewing by such machines,—the object being to produce a clear outline in the design, and to make the embroidering or sewing as strong as that performed by hand.

[Printed, 8d. Drawing.]

A.D. 1855, August 16.—N° 1867.

BAKER, WILLIAM EMERSON.—(*A communication.*)—1. Making the stands or frames of sewing machines in the form of a box or

case, which is to enclose the machine when out of use, and keep it free from dirt and dust.

2. In order to reduce the dimensions of the box employed, the handle or crank pin on the fly wheel is so applied, that when in use it may project from the outer surface of the wheel, but when out of use it may pass through the wheel.

3. Apparatus for keeping the thread in a state of tension.

4. Mode of securing two parallel rows of stitches, by employing only one retaining thread at the back. In making the two rows of stitches two needles are used, each having a sewing thread, which it carries through the fabric, as usual, to form the stitch; but instead of two threads being employed to fasten the two rows of stitches at the back, only one thread is used, and the fastening is performed in the same manner as the fastening of the stitches produced by one needle only, except that the under thread is passed through the loops of both sewing threads.

5. Applying apparatus to sewing machines for winding thread on to the machine bobbins.

[Printed, 1s. 2d. Drawings.]

A.D. 1855, August 25.—N° 1925.

AVERY, JOHN. — (*A communication.*) — The inventor claims “ feeding the material to be sewed by means of a feed plate, “ which is guided in the direction of any curved, “ circuitous, or irregular line of sewing by means of grooves, or “ their equivalent on its back side, of a form corresponding to the “ said line, receiving or working in contact with fixed pins, or “ other equivalent, fixed guides, whereby motion is only allowed “ to the said feed plate in such direction as to make the material “ describe, in passing the needle, the intended line; the said feed “ plate receiving motion by any mechanical device suitable “ for the purpose; combining the guide pins, or their equivalents “ with the shoe which confines the feed plate, and produces the “ necessary pressure of the plate on the material.”

[Printed, 6d. Drawing.]

A.D. 1855, August 27.—N° 1946.

MOORE, BENJAMIN.—(*A communication.*)—1. Improvements applicable to sewing machines in general (shown applied to a machine having a straight needle for carrying a thread down-

wards through the fabric and forming a loop, through which another thread is conducted by a shuttle),—consisting in apparatus for holding and feeding the fabric to be sewed, and regulating the length of the stitches; arrangements for taking up the slack of the thread on the downward passage of the needle; combination of cams for moving the levers for actuating the needle and shuttle, and taking up the slack of the needle thread.

2. Self-acting apparatus for sewing or binding hats or similar articles, applicable to any kind of sewing machine,—including suitable arrangements for supporting the hat internally, and forcing the edge of the brim into the binding gauge or guide; for guiding the ribbon or tape used as binding; and for communicating the requisite feed motion to the hat.

[Printed, 2s. 2d. Drawings.]

A.D. 1855, September 3.—N^o 1982.

HEAVEN, ALFRED.—1. So working embroidering machines that the greater part of the embroidering thread is brought on to the face side of the fabric, and only a small quantity of the embroidering thread on the reverse side of the fabric.

2. Employing a shuttle or other instrument to introduce a binding thread at the back of the fabric, whereby the embroidering thread is secured.

3. Providing each embroidering needle with a bobbin, from which the embroidering thread is unwound as it is required, for the purpose of saving the time lost in threading the needles, as in the embroidering machines of the usual construction.

[Printed, 10d. Drawing.]

A.D. 1855, September 14.—N^o 2079.

THOMAS, WILLIAM FREDERICK.—1. Applying apparatus to sewing machines for stopping the movement of the work when the needle thread is broken or is not supplied to the needle, or when the second or shuttle thread is not correctly passed through the loop of the needle thread; and also, if no second thread be used, for stopping the machine when the instrument which is employed to take the loop fails to do so.

2. Apparatus for varying the direction of movement of the work from time to time.

3. Combination of parts for causing the fabric or work (or it might be the needle), in place of being moved continuously in

one line, so that the stitches follow each other at a certain distance apart, to be moved back a given distance and then forward, so as to obtain a description of back stitch.

4. Arranging or combining the parts of a sewing machine in such manner that the fabric or work, in place of being moved constantly in one direction only, so as to produce the stitches in a line one after the other, has at the same time a lateral movement, first in one direction, and then in the other, whereby the stitches are caused to follow each other in inclined directions, and produce a zigzag line of work.

5. Making each stitch of sewing machines a fast stitch, by causing the needle thread to be bent into a loop in front of the fabric or work, and then conducting the point of the needle through such loop and through the fabric, in order to form a loop to receive the back or second thread; or the fastening may be effected by forming the back or second thread into a loop, conducting the needle thread through such loop, and then passing the back or second thread through the loop of the needle thread.

[Printed, 1s. 10d. Drawings.]

A.D. 1855, October 1.—N° 2190.

HOPE, GEORGE CURLING.—The following extract from the Specification will clearly explain the nature of this invention:—

“ Hitherto a description of work intended to be ornamented or “ finished by needlework, and known in the trade by the term of “ ‘appliqué,’ has been produced by cutting out figures, patterns, “ or devices from a textile fabric, and applying them on to “ grounds of similar material. Now my invention consists in “ producing effects resembling ‘appliqué’ work, by printing on “ to textile fabrics patterns, figures, or devices, either by means “ of what is known as ‘block printing,’ or by means of printing “ and embossing,—the work thus produced being intended to be “ subsequently finished or ornamented at pleasure by needlework. “ The pattern, figure, or device may be of a different shade or “ color, or of different shades or colors from that of the ground “ on which it is printed.”

[Printed, 4d. No Drawings.]

A.D. 1855, October 19.—N° 2344.

SMITH, WILLIAM.—(*A communication.*)—1. Producing the stitch known as the “lock stitch” by means of an incased spool

or bobbin, caused to revolve horizontally on its own centre or axis (without a reciprocal motion in the line of its axis), in connexion with a needle having a vertical movement. The spool case is a circular box of steel or other suitable material, formed with a "nose" upon its edge for catching the needle thread and carrying it round in order to pass the spool or bobbin through the loop of the needle thread; and motion is given to the spool case in such manner, through the medium of elliptical toothed wheels, that in some portions of a revolution it turns faster than at others, causing a dwell or pause, which in conjunction with the movement of the needle effects a full and complete stitch.

2. Method of driving a spool case, somewhat similar to the spool case above described.

3. Taking up the slack of the needle thread independently of the motion of the needle.

4. Apparatus for cording the edges of fabrics and materials, which may be attached to any ordinary sewing machine, and serves effectually to keep the cord in its place within the hem of the article to be sewed, while the latter is being operated on by the needle and thread, being likewise arranged so that any ordinary knot in the cord, or irregularity in the edge of the fabric, will not impede the progress of the work; also apparatus for guiding and feeding the binding to be laid over and sewed upon the edges of similar articles.

5. Arrangements for driving simultaneously two or more vertical needles, either with one under-side circular or other needle, shuttle, revolving spool, or its equivalent, or in combination with a corresponding number on the under side of the fabric or work, so that two or more parallel rows of stitching may be executed at the same time.

6. Combination of a portion of the last-mentioned arrangement with an improved feed apparatus.

7. Improved apparatus for delivering thread from spools to needles, and regulating the tension thereof.

[Printed, &c. &c. Drawings.]

A.D. 1855, October 20.—N° 2355.

WHITAKER, FREDERIC.—"This invention relates to those descriptions of sewing machines in which two threads are employed; and the manner in which the stitch is made is as

“ follows :—The needle passes through the work, and in so doing
“ carries a loop of its thread through it. This loop is then caught
“ by a hook, which carries it round and over a globular ball or
“ box, which is loosely held between suitable supports, and in
“ this globular box a ball of thread is placed. The end of the
“ thread is drawn through a hole in the ball, so that when the
“ needle-thread is drawn over the ball as before mentioned,
“ the ball and needle-threads are looped through each other.
“ The hook which catches the needle-thread travels about three
“ quarters round the ball, so that when the hook gets near the
“ end of its course, the loop slips off, because of the reversed
“ position of the hook ; and when the needle-thread is drawn
“ tight the stitch is complete, and the hook returns to take the
“ loop made by another descent of the needle. The delivery of
“ the thread from the ball is regulated by passing the thread
“ through a small piece of vulcanized india-rubber, which gives
“ the necessary friction to the drawing off of the thread.

“ In place of drawing the loop of the needle thread over the
“ ball, as before described, the hook may be arranged to pass
“ through the loop of the needle thread, then to catch the ball
“ thread and draw it into a loop and through the loop of the
“ needle thread, and afterwards pass it over the ball.”

[Printed, 1s. Drawings.]

A.D. 1855, November 1.—N° 2442.

BELLFORD, AUGUSTE EDOUARD LORADOUX.—*A communication*).—Improvements in sewing machines, consisting, first, in a peculiar kind of looper, working in combination with a needle to form a stitch with a single thread ; secondly, in a method of operating the needle in connexion with the looper, to throw the thread over its point ; thirdly, in mechanical means for carrying out the second improvement ; and fourthly, in a feed motion for moving the cloth in the line of the seam.

The needle has an eye near its point to receive the thread, which it carries downwards through the cloth to form a loop on the under side near the point of the looper ;—such looper consisting of a piece of metal, which is straight, except at one end, where it is slightly curved and pointed ; and it is placed parallel to the line of motion of the needle, and below the table or bed of the machine, *with the point downwards*. Immediately that the needle commences

to rise and leave the thread slack, it also begins to turn upon its axis towards the point of the looper, and as it continues to ascend, it draws the thread in the form of a loop over the looper, which, without detaining the loop, merely keeps it open and in position for the needle to pass through in its next descent. When the needle again descends, the loop is drawn over and off the looper by the consequent tension of the thread.

[Printed, 6d. Drawing.]

A.D. 1855, November 12.—N° 2544.

KIDD, JOSHUA.—(*Provisional protection only.*)—Relates to sewing or stitching machinery in which two threads are used, one thread being placed in a stationary thread holder, and the other conducted around the stationary thread holder by a needle having a vertical and inclined motion.

Consists,—1. In the application of a stationary thread holder or carrier, of any convenient shape, so placed as to allow a second thread to pass around it.

2. In the application of a jointed needle carrier, whereby the needle which conducts the upper thread is caused to incline or oscillate during its withdrawal from the cloth or fabric, and pass the thread it carries around the stationary thread holder, thus interlooping the two threads together.

3, 4, 5, 6, 7. Arrangement of apparatus for feeding the cloth, and giving motion to the needle carrier and other parts of the machinery.

[Printed, 4d. No Drawings.]

A.D. 1855, November 24.—N° 2649.

LOBSTEIN, JEAN.—Improvements in machines for sewing by the employment of a needle having a vertical movement and a shuttle working horizontally,—including arrangements of parts for holding, feeding, and guiding the fabric or work (so as to admit of all kinds of objects being sewed, whether flat or tubular closed or not at one end, with the sewing in straight, zigzag, or curvilinear lines); also for actuating shuttles of various lengths in the same machine; for regulating the tension of the thread; and for varying the length of the stitch.

[Printed, 1s. Drawings.]

A.D. 1855, December 11.—N° 2791.

HUGHES, BERNARD.—(*A communication.*)—So arranging and operating the needle, shuttle, and other accessory apparatus of a sewing machine that the thread from the needle, when passed through the material to be sewed, is tied by a half or whole knot of the shuttle thread; and also so working the feed motion that the thread shall be tied, at the will of the operator, by a half or whole knot at every or any stitch that may be thought necessary. The needle, which has an eye near its point for the reception of the thread, moves vertically, and the shuttle revolves in a vertical circular shuttle-box, placed parallel to the line of motion of the needle, but below the work plate whereon the material to be sewed is laid. When the needle has carried its thread down through the material, a looper bears the thread across the track of the shuttle, and forms a loop through which the shuttle passes. If it is desired to tie each stitch with a half knot only, the cloth is moved forward as the needle is ascending, and when it again descends, the looper makes another loop, through which the shuttle passes. If a double knot is to be tied, the cloth is only moved at every alternate ascending movement of the needle, which is thus caused to descend a second time into the same hole, and the loop formed is the same as in the first descent, so that the shuttle is caused to pass twice through the same loop.

[Printed, 8d. Drawing.]

A.D. 1855, December 21.—N° 2894.

MURDOCH, JAMES.—(*A communication.*)—Apparatus for working chain-stitch embroidery by a combination of five instruments; viz., a needle formed with an eye to receive the thread; a tightener to give the requisite tension to the thread; a hook to take hold of the loop presented by the needle; an opener or pusher for opening out the loop into which the needle has to pass; and a hook for fastening off the thread at the completion of each figure or design. These instruments are attached to bars placed moveably in a carrying frame, which is capable of a to-and-fro motion across the frame of machine, and the bars receive the requisite motion from a series of cams. The pattern is formed by means of a jacquard machine, which, by causing the cloth to ascend or descend, and the carrying frame to move to and fro across the face of the cloth, brings the needle opposite the required parts of

the cloth, in order to form the design. To produce each stitch, the needle carries the thread through the cloth in the form of a loop, which is caught by the hook, and drawn laterally. The opener or pusher expands the loop, so that the needle, in its next advance, may pass through it; and when this takes place, the hook and pusher abandon the loop, and the hook, catching the new loop presented by the needle, draws the same laterally, as before.

The needles in the above-described apparatus are all fixed on the same bar; but a modification is described, in which the needles are mounted independently of each other on the same bar, and, by means of the jacquard apparatus, any required number of needles may be worked simultaneously, and the stitch or stitches of one or more needles may be fastened off without interfering with the motion of the other working parts.

[Printed, 1s. 6d. Drawings.]

1856.

A.D. 1856, January 19.—N° 147.

HEAVEN, ALFRED, and BOOTH, WILLIAM.—(*Provisional protection only.*)—Improvements in embroidering machines.

1. "Arranging the needles in curved, diagonal, or zig-zag lines, "so as to produce a corresponding position in the designs "embroidered on the fabrics" instead of placing them in straight lines as hitherto. "The curved" or other "position of the "needles may be obtained by making the rail of the needle "holders of a corresponding shape, or the needle holders may be "attached to supports of various heights, fixed to a straight "rail."

2. Construction of the needle holders. "The end of the spring "lever, instead of fitting in an open slot piece bearing on the "needle, is inserted in a hole in a square piece, which has pro- "jections taking into a recess in the bottom plate of the needle "holder; by this means the needle is held more securely."

3. "Dispensing with the treadles usually employed for taking "hold of and liberating the needles" and "effecting these

" motions by a handle attached to each carriage; these handles " act on slide bars, connected to the levers, by which the parts " are put in motion for taking hold of and liberating the needles." This part " is applicable to those embroidering machines in which " moveable needle holders are employed."

4. "The application of upright instead of horizontal rollers, for " distending the fabric to be operated upon."

[Printed, 4d. No Drawings.]

A.D. 1856, January 29.—N° 236.

FOXWELL, DANIEL.—"Improvements in sewing machines" consisting "in the use of two straight needles and one hooked " needle, one straight needle working vertically and one horizontally, and the hook or fork working also horizontally; or in " the use of two needles without the hook or fork, one working " vertically and one horizontally." In the first arrangement the inventor causes "the vertical needle to pass down through the " cloth or material to be sewn, and the second needle working " horizontally to pass through the loop of the vertical needle, " and the hook or fork to catch the loop of the horizontal needle, " and so place it that the vertical needle in its next descent can " pass through the loop of the horizontal needle; then the " horizontal needle again passes through the loop of the vertical " needle, and so on." In the second arrangement the inventor says, "I use two straight needles only, one vertical and the other " horizontal. I first tie the end of the thread of the horizontal " needle to a stud fixed for that purpose, then I pass the horizontal " needle under the material to be sewn, so that the vertical needle " in its descent can pass through the loop, or between the thread " and the horizontal needle, then I draw back the horizontal " needle and pass it through the loop of the vertical needle, then " I lift out the vertical needle and pass it through the material " and the loop of the horizontal needle, and so on for any length " of sewing." Two bobbins are used. The sewing may also be performed "with one needle, one thread, and one hook or fork." The needles can be worked either under or over the material to be sewn. The drawing represents two machines, having only vertical and horizontal needles, in one of which the sewing is performed on the upper side of the cloth, while the second pierces and sews the cloth upon the under side, and this arrangement

the inventor prefers. The material to be sewn is moved forward at the finish of each successive stitch by means of a lever actuated by cams. This lever also regulates the length of the stitch, for that part of it upon which the cams work consists of a spring, which may be forced outwards from the lever by means of a small set screw "thus throwing the lever further from the centre of "vibration" and varying the feed of the cloth. In the second machine the cloth table with its cams and lever "are situated above "the cloth and propel it from above," the vertical needle moreover works from below. In the first machine, in consequence of the sewing being performed on the *upper* side, the relative positions of the vertical needle and the table and cloth lever are reversed. It may happen in instances of fine sewing that "the horizontal "needle will sometimes pass on the outer side of the loop" formed by the vertical needle "in lieu of through it" and to remedy this the inventor provides a small lever worked by a cam, upon the revolution of which the thread of the vertical needle is forced outwards from the said needle and thereby forms a loop.

[Printed, 10d. Drawing.]

A.D. 1856, February 13.—N° 372.

MITCHELL, HENRY FORT, MITCHELL, WILLIAM, and CLARKSON, JOHN.—This invention relates to sewing machines in which a vertical needle and a horizontal needle are used in combination, and consists in improvements in the construction and general arrangement of the machine and particularly in the methods of working the feed motion and the under or horizontal needle. The feeder is worked directly from the main driving wheel by means of levers and cams, and has "an up and down "and backward and forward motion" communicated to it by the same cams. "The material to be sewn, lying on the top or "surface of the machine, is pressed down by the feeder, and held "fast whilst the stitch is made, then the feeder rises, passes "backward the exact distance for another stitch, and falls upon "and draws forward and holds the material whilst another stitch "is made, and so on continuously." The inventors state that by their improvements they are "enabled to regulate the length of "the stitch required, and the time for making the same, and also "to adapt the lift of the feeder to the thickness of the material

“ to be sewn, as well as preventing thin material from locking or “ catching in the machine.” The under needle has a “ reciprocating lateral and oscillating motion.”

[Printed, 1s. Drawings.]

A.D. 1856, February 22.—N° 458. (* *)

STRANG, WILLIAM.—“This invention relates to certain improved mechanical arrangements for producing in the hand loom the class of ornamental fabrics known as ‘sewed goods.’” “The yarns or threads for forming the ornamental device are contained in some cylindrical boxes (or shuttles), formed of brass or other suitable material, the thread ends issuing from small apertures in the front ends of the boxes, inside which they are clamped between spring plates to give them the requisite tension. These boxes or shuttles lie in a series of angular troughs or seats, fixed to the frame by separate brackets or projections, leaving spaces between each to permit of the rising of the warp threads, and the angular points of the trough are directed downwards, so as to divide the rising warp threads. The boxes or shuttles are shifted across from one trough to another by means of downward projecting plates, fixed to a bar, capable of sliding in a groove in the top of the frame. These plates descend sufficiently far to push the small shuttles across when the bar is shifted transversely, which shifting may either be done directly by hand or by means of a contrivance similar to that known as the ‘lappet wheel,’ and employed in the manufacture of certain classes of figured goods.

“ A further improvement consists in using two, three, or even more rows of shuttles or boxes, with their troughs or carrier details in one frame, each row being shifted by means of a separate sliding bar, by which means a greatly increased variety of patterns may be produced.”

[Printed, 10d. Drawing.]

A.D. 1856, March 3.—N° 541.

HOMAN, JULIUS.—“Improved mode of driving sewing machines.” This invention relates to such machines as are driven by a band or strap. “In using sewing machines it is necessary when sewing round curves or turning angles to retard for a moment the action of the machine, and then to proceed as

" before ; but when working the machine by the aid of steam power, it has been found requisite suddenly to stop the machine " in order to effect the turning, thereby occasioning much delay." The inventor proposes to connect the machine with the source of motive power " by means of a loose strap which will not act " efficiently until tightened by a tension pulley or pulleys." The pulley or pulleys he connects " with a treadle, which as long as it " is depressed will keep the band at tension. By removing the " pressure from the treadle the band will be slackened more or " less and allowed to slip over the pulley on the driving shaft of " the sewing machine, and thus the variable motion required will " be produced."

[Printed, 1^d. Drawing.]

A.D. 1856, March 10.—N^o 583.

BARTLEET, ROBERT SMITH.—(*Provisional protection only.*)—This invention consists in substituting for ordinary needle wrappers of paper " cases or holders formed of glass, china, wood, " bone," or other substances, and " with the bottom or end of " the case or holder inclined, or otherwise formed, to cause the " needles placed therein to range in steps one above the other, so " that any one needle may readily be taken from those, which for " the time range the highest without disturbing or touching the " next below." The bottom and top of such case may be fitted with cork as a protection to the needles.

[Printed, 1^d. No Drawings.]

A.D. 1856, March 27.—N^o 740.

THOMAS, WILLIAM FREDERICK.—"(1.) Part of the invention " has for its object the making of button holes and edge seams. " For this purpose, the needle descends through the fabric and is " fastened by the second thread, as heretofore. The needle then " passes through the opening or beyond the edge, and is fastened " by the second thread; but in the returning of the needle, the " thread thereof is held open in the form of a loop, in order that " when the needle has again passed through the fabric, and its " thread has again been fastened by the second or back thread, " the needle may pass through the loop of its own thread, which " was held at the time the needle previously passed (down or up) " through the hole or beyond the edge, by which a purled or

“ interlooped edge will be produced,” “ and by holding the cut portions or edges of the fabrics by clamping instruments, the work may in some cases be improved.”

(2.) Keeping the shuttle thread in proper tension “ by means of the end of a lever or instrument pressing on the thread against the side of the shuttle, which pressure is relieved by a cam or projection at the proper time.”

(3.) Facilitating “ the drawing off of the quantity of the needle thread from the bobbin, with a view to accomodate for different thicknesses of fabrics ; for which purpose a self-acting apparatus is applied, by which means the shoe, as it rises or falls by reason of its passing over the different thicknesses of fabric which the needle has to pass through, acts by a lever or interposed instrument to vary the length of thread drawn off ; and in like manner may the tension of the thread be varied.”

(4.) Sewing tubular work, such as the fingers of gloves, &c. “ Where it is necessary that the article may be able to slide or pass on to the narrow table or surface,” (through which the needle works, and under which the shuttle or apparatus which introduces the second thread is worked) “ a guide is applied, which is formed with a double bend, or has two guiding surfaces to guide the two edges of the material one under the other;” “ or in place of such guides the edges may be clamped.” In machines for this kind of work the table through the needle works “ is in some cases arranged to be at right angles with the axis on which the arm that carries the needle works, and the shuttle or apparatus which introduces the second thread is put into action from one end of the narrow table or surface.” In this case the work moves in a direction at right angles to the arm.

[Printed, 1s. 4d. Drawings.]

A.D. 1856, June 17.—N° 1427.

BAYLIS, ARTHUR GEORGE.—Improvement in needles. This invention consists in making the eye of the needle “ of an elliptical or nearly elliptical form,” and making “ on the body of the needle near the lower part of the eye an inclined groove or depression running into the eye. The said groove or depression is formed on opposite sides of the needle, so as to run into the eye on both sides of the said eye.”

[Printed, 4d. Woodcuts.]

A.D. 1856, June 23.—Nº 1475. (* *)

ATKIN, ISAAC, and MILLER, MARMADUKE.—“Improvements in machinery for sewing lace and other fabrics.”

“The machine consists of two fluted or toothed rollers gearing together, which corrugate the fabric and pass it in stitches on the needle; a narrow groove is cut in each roller at right angles to the flutes or teeth. These grooves are cut of such a depth as to allow of the point of a needle being placed between them when the rollers are brought into gear.”

“A needle is used which is straight, except near the hinder end, where it is bent into the segment of a circle. Instead of an eye (as in the ordinary sewing needle), a beard or hook is formed, the point of which is bent down into a nick made in the substance of the needle. This hook facilitates the threading of the needle, and the throwing off or unthreading.”

“A needle holder is employed, the object of which is to maintain the point of the needle correctly between the fluted rollers, at the same time allowing the fabric to be freely drawn off the needle in a continuous run. This needle holder consists of a plain roller fitting the bend in the needle; over this roller the needle is placed, and is properly held by two smaller rollers, which press the bend of the needle on to the periphery of the larger roller.”

[Printed, &c. Drawing.]

A.D. 1856, June 26.—Nº 1505. (* *)

MACDONALD, DAVID.—“Improvements in printing textile fabrics and other surfaces.”

The invention relates to machinery more particularly suitable for printing from zinc patterns on muslins, to be afterwards embroidered, but is also applicable to printing “according to either the zincographic or lithographic systems.” It consists in giving an impression during the backward as well as the forward motion of the table carrying the plate or stone upon one of two rolls of fabric alternately. For this purpose two pressure rollers and two counter pressure rollers are arranged near the centre of the framing, the former being alternately depressed, so that the plate passes in contact with each of them, and imparts an impression to the fabric passing round it. “Self-acting,” damping, and

inking apparatus, "supplied in any convenient way," may be employed in combination with the above, either between the pressure rollers or outside them.

[Printed, 1s. Drawing.]

A.D. 1856, July 12.—N° 1650.

HERTS, ABRAHAM.—(*A communication.*)—(*Provisional protection only.*)—This invention relates to an "improved apparatus for holding material during the operation of sewing." The following extract from the Specification will clearly explain this invention. ". . . . consists of two plates of metal or other suitable material, of bivalve configuration, united and working on a hinge or pivot at or near their centre, sufficiently apart that by pressing them together on one side, the opposite end or side is opened to permit the insertion of one end of the material to be sewn."

[Printed, 4d. No Drawings.]

A.D. 1856, August 9.—N° 1881. (* *)

REID, ARCHIBALD LOCKHART.—"Improvements in producing ornamental figures or devices on textile fabrics and other surfaces."

The invention consists in depositing powdered colouring matter upon the surface to be ornamented through perforated patterns. The process is suitable for marking the "outline figures or devices to be worked by the sewer or embroiderer in the production of 'sewed muslins' and other embroidered goods." This is effected by a combination of rollers, which shake the powdered colour through an endless pattern sheet from a colour holder, and then fix the powder devices by an after treatment. The fabric is passed into the machine by an endless feed-cloth and rollers, and the powder is applied at the instant when it passes over or round the inner roller of the feed-cloth arrangement. The fabric then passes over a steam chamber or heated roller which sets the powder.

[Printed, 10d. Drawing.]

A.D. 1856, September 19.—N° 2200.

TEMPLETON, ARCHIBALD, and LAWSON, JOHN.—"Improvements in the manufacture of pile fabrics." "This inven-

"tion relates to the manufacture of those descriptions of pile fabrics in which chenille or a similar fabric is used to form the pile. Heretofore in making pile fabrics from chenille, the chenille itself has been woven into the fabric either as the warp or weft thereof." This invention consists in "attaching the chenille or other fabric to a back of woven or other fabric by means of sewing or cementing." "The description of chenille used . . . is such as is employed when weaving with chenille, each piece of chenille consisting of a woven back bone and a projecting fringe on each edge, which bend up or incline toward each other. . . . The canvas or foundation to form the back of a suitable length or width is wound upon a roller, which is placed upon a frame with suitable bearings. The chenille being prepared and arranged to form a pattern or a "plain surface" is similarly placed on a roller. The end or ends of the chenille being first attached to the canvas, both are conducted towards the needle or needles of the sewing machine. The foundation, with the chenille attached, is made fast to a roller which draws the compound fabric under the needle. "A reed or other guide is used so as to keep the chenille fur in its proper place and position, and a small pointer or plough is used, through the back of which the needle works, guiding it to the back bone of the fur stripe, and preventing the fibres being tied down by the thread."

[Printed, &c. Drawing.]

A.D. 1856, October 1.—N^o 2298.

NEWTON, ALFRED VINCENT.—(*A communication.*)—"Effecting the necessary movements of the shuttle and of the feeding plate of sewing machines by devices having a positive motion, the object being first to impart such a motion to the shuttle that it shall move faster while going through the loop than in travelling back, thereby increasing the time for taking up the slack of each stitch and requiring less stopping of the needle while the shuttle is passing through the loop." The shuttle is thrown by a "swinging ellipse" "supported at its lower end on a fixed pivot," and actuated by a cam on the driving shaft of the machine. This cam works within the ellipse, and when this cam is bearing upon it near its pivot, the ellipse moves the shuttle faster than when it is bearing on the other parts.

"The feeding plate by which the work is traversed" is attached to an arm, one end of which is jointed to a rocking shaft while the other works in the groove of a cam on the driving shaft. "The rock shaft receives its motion from the cam through a crank rod; the rotation therefore of the cam imparts to the feeding plate the compound motion required." By jointing the crank rod "to a box or lug carried by the cam, and adjustable by screws, so as to vary the amount of its eccentricity, the length of the feed motion and consequently the length of stitch may also be regulated at pleasure."

[Printed, 10d. Drawing.]

A.D. 1856, October 11.—N° 2384.

WATSON, WILLIAM CASWELL.—"Improvements in the method of constructing and working the hook which takes up the loops formed beneath the table in single-thread sewing machines." By this improvement "the thread is seized while in contact with the side of the needle, drawn away, and opened into a wide loop directly in the path of the needle at its next stroke. In performing this the hook takes three different positions. In the first, it is at the side of the needle with its point just back of the thread; in the second it has moved horizontally, thus taking hold of the thread and pulling it off to one side; in the third, the hook turns one quarter round, thereby twisting the loop from a vertical to a horizontal position, forming a comparatively large opening directly in the path of the needle." The hook is "flat and broad in front and thin when viewed at the edge." It is carried by a sheath fixed to the end of a lever under the table, which lever is actuated by a cam on the driving shaft. The sheath holding the needle rotates in its bearing at the end of the lever and so turns the hook. "The point of the needle is braced when beneath the table to stop all vibration and to diminish the risk of breakage by the lateral pull of the hook upon the thread in case the latter should be stopped by a knot." The invention also includes an improved feed motion so designed that the finger pulls the cloth along instead of pushing it. When the arm returns the finger for a new feed the needle is in the cloth, and thereby keeps it in place." The length of the stitch is regulated by a screw stud which alters the angle of *one of the actuating arms.*

[Printed, 8d. Drawing.]

A.D. 1856, October 15.—N° 2411.

TURNER, ARCHIBALD, and TURNER, LUKE.—“An improved manufacture of elastic fabrics.”

In this invention “the india-rubber strands are arranged longitudinally, side by side, and are covered on one side by a fabric which may be composed of silk or satin, or any other material which will form the face of the fabric, and on the other side with a fabric of cotton the india-rubber strands being between the two woven fabrics. The materials being thus arranged, are then sewed or stitched together by means of threads or yarns, which are passed through the two woven fabrics between the elastic strands, and are secured therein by means of cross threads, or in any other convenient way that will hold the first threads securely. These threads or yarns are worked by means of sets of needles, somewhat similar to knitting needles, but mounted in a bar or bars, which are actuated by suitable mechanism, to produce the same motion as those of ordinary sewing or stitching machines The strands of india-rubber are by this means sewed between the two woven fabrics by means of rows of stitches extending longitudinally along the compound fabric, which will be rendered elastic by means of the india-rubber strands contained therein.”

[Printed, 2s. Drawings.]

A.D. 1856, November 11.—N° 2648.

SMITH, WILLIAM.—(*A communication from Edward Howard and others.*)—Improvements in sewing machines such as—

1. “Semi-rotating or revolving thread benders.”
2. Feed apparatus consisting of “two feeding rings, or double or compound rings or feed wheels arranged to hold the cloth on both sides of the needles.”
3. The combination of suitable working and reversing gear with the feeding rings or wheels.
4. A tube placed vertically through the table, close to a hole in the same, and connected with it by a slot. The cloth is caused to revolve round this tube in the operation of sewing eyelet holes.

[Printed, 2s. 4d. Drawings.]

A.D. 1856, November 14.—N° 2697.

CRAWLEY, JOHN.—(*Provisional protection only.*)—This invention relates to improvements in “lock-stitch” sewing machines.

The inventor employs two threads as heretofore, one of which is carried by the needle, the other by a shuttle, the latter passing at the proper instant through the loop of the former. "The needle is mounted vertically in a bar which forms part of a moveable frame, and is made to move up and down in guides or grooves made in a suitable stationary framing." This frame is actuated from the main shaft of the machine, and the fabric to be sewn is placed on a table under which the shuttle works. "The shuttle is actuated by means of springs, either of metal or vulcanized india-rubber, or other suitable material, in the following manner:—The pendent arm of the sliding frame that carries the needle is provided with a horizontal arm, which acts against a stud or studs or projections fixed on a gutta percha or leather band or strap, which is attached to a roller provided with a ratchet wheel and click for holding it securely at any point required. When the needle with its thread descends and passes through the fabric, the pendent arm of the sliding frame also descends and comes in contact with the tail of the click lever of the ratchet wheel, when the wheel will be liberated, and a strong spring at the end of the gutta-percha or leather band which has been stretched by a previous operation of the machine will immediately come into action and throw the shuttle quickly through a loop that will be formed by the returning motion of the needle. The shuttle, when it has done its work, will be drawn back again into its original position by the action of an arm acting upon a stud near the upper end of the gutta percha or leather band, assisted by another spring, which will draw the band back immediately it is released."

[Printed, 4d. No Drawings.]

A.D. 1856, November 15.—N° 2700.

LESEURE, NICOLAS PIERRE JOSEPH.—Improvements in embroidering machines. The frame carrying the needle is suspended over the work by a series of levers. This mode of suspension allows the needle to be moved in "an ascending and descending movement as well as a movement from right to left," and is really a universal joint. "The needle slide is bent so as to form a stop or abutment against which a small lever provided with an antifriction roller works, for the purpose of putting in action the nippers, which nip the thread when the

" needle slide ascends. The thread passed through the embroidery needle is set free at the proper time by the roller lever " pressing at its opposite end against another abutment adjustable " on the frame. On the opposite side of the needle slide is " placed a small lever working on a fulcrum fixed in the frame- " work. To one end of this lever is secured a long rod or thread " holder. When the needle slide abuts against the opposite end " of its lever, and at the time the nippers open, the thread holder " presses on the thread as the needle rises with the stretched " thread, so as to form a loop, when the needle descends with " a fresh supply of thread." Another form of nippers is also described. These consist of " two horizontal levers, the ends of " which work on a common fulcrum." " The two opposite ends " are pressed against two stops when the needle slide is raised " and so nip the thread.

[Printed, 10d. Drawing.]

A.D. 1856, November 25.—N° 2794.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Eugene Lebée.*)—(*Provisional protection only.*)—Improvements in embroidering machines " in which the material to be embroidered " is mounted in a frame free to move horizontally and vertically " in guides when acted on by jacquard machinery." " The em- " broidering is performed by means of needles pointed at both " ends and held by springs in carriers travelling on beds on each " side of the material, and worked by cams and springs or other- " wise." " These needles pass from the carriers on one side " through the material to be embroidered to the carriers on the " other side, and the threads are caught and drawn (up, or along, " or down,) by means of combs or notched plates, worked by " counterbalance weights and levers, acted on by cams or by " connections from the jacquard or otherwise. The combs consist " each of two plates (connected by pins or screws), one sliding in " slots over the other, and either or both free to move in guides ; " one plate of each comb is notched."

[Printed, 4d. No Drawings.]

A.D. 1856, December 4.—N° 2881.

HENSON, WILLIAM, and PALMER, HENRY.—(*Provisional protection only.*)—This invention consists in adopting sewing

machines having the tables on which the cloth is placed moveable. These tables may be arranged with one or more needles, and are also connected with the driving motion in such a manner that any movement "necessary to produce a given set of stitches," &c., may be obtained by properly setting the machine before starting. Thus "sewing may be produced by the aid of these improvements" "without any special attention to the paths of the needles on the part of the operator, except to set the machine as aforesaid."

[Printed, 4d. No Drawings.]

A.D. 1856, December 16.—N° 2978.

THOMAS, WILLIAM FREDERICK.—A contrivance for keeping the edges of materials to be sewn up to the guide. For this purpose "discs or rollers on axes placed in an oblique direction to the movement of the materials are used together with the guide, " or, in place of such oblique rollers or discs, instruments moving towards the guide may be employed, such instruments having motion communicated to them in such a manner as to admit of their passing back from the guide without moving back the materials."

The inventor also proposes the use of a rotatory brush to keep "binding" in position when such work is done by the sewing machine; or in place of such brush "a reciprocating instrument, " such as is used for feeding the material to the needle" may be used. "In order to facilitate the passing of the loop (drawn through the fabric or material by the passing of the needle) over a shuttle or bobbin" a lever actuated by an eccentric is used; the end of this lever enters the loop and holds it open in a convenient manner for the passage of the shuttle.

[Printed, 10d. Drawings.]

A.D. 1856, December 27.—N° 3077.

NEWTON, WILLIAM EDWARD.—(*A communication.*)—(Provisional protection only.)—This invention relates to a "lock-stitch" sewing machine. Each stitch is "tied or knotted by throwing a shuttle and thread through a loop formed from its own thread." "The thread is, by means of a suitable needle, carried double through the goods to be sewed, both in passing up and down. " A single strand only is employed, which is carried in a shuttle, "and the loop is drawn through the fabric by the needle. The

“ shuttle passes with the end of the thread through the loop.
“ In this stitch it will be seen that both strands of the loop do
“ not pass through the adjacent loops as in the chain stitch, but
“ one strand of the loop passes through one loop, and the other
“ through the next loop in succession.”

[Printed, 4d. No Drawings.]

1857.

A.D. 1857, January 9.—Nº 77.

JOHNSON, JOHN HENRY.—(*A communication from Pierre Chevrolot and Jean François Ligney.*)—This invention relates to a machine for sewing and embroidering in which needles of ordinary construction are used. The fabric to be worked is carried in a frame placed between the needle carriers. This frame is adjustable in each direction to bring fresh surfaces under the action of the needles. The needles are held in pincers on the carriers which are so adjusted that the distance they advance or recede from the fabric is regulated by the length of the thread. The carrier holding the needle passes it through the fabric when it is seized by the pincers of the opposite carrier. This one then retires carrying with it the needle and drawing through the whole needleful of thread which is held by suitable appliances to prevent it from becoming entangled. The carrier then makes half a revolution horizontally, which movement brings the needle into position for the next advance and transfer through the fabric.

[Printed, 2s. Drawings.]

A.D. 1857, January 16.—Nº 137.

BOUSFIELD, GEORGE TOMLINSON.—(*A communication.*)—In this improvement “ a feeding bar is used, which slides in dovetail “ or slotted guides. This feeding bar is moved by a lever, con- “ nected thereto by a swivel or joint, so as at all times to move “ the feed bar in a plane with the material which is being sewed.” “ An arrangement of pins is used through which the needle “ thread is laced for the purpose of giving uniformity to the “ tension.”

"Heretofore in constructing some sewing machines, the needle bars have been made to vibrate in the arc of a circle; now, part of this invention consists in using a balanced needle bar for sewing machines (when constructed in the form of the segment of a circle), suitable for actuating the shuttle driver by one end and for carrying the needle by the other, the complete bar forming the arc of a circle, of which the point of suspension is the centre. A slotted shuttle driver is used, which is actuated directly by the needle bar, and in such manner as to cause the shuttle to pass through the loop of the needle thread at its proper time, gradually decreasing its speed, and stopping at or about the same time with the needle." An index is added to show the number of stitches made to the inch.

[Printed, 1s. Drawings.]

A.D. 1857, January 20.—Nº 162.

NEWTON, WILLIAM EDWARD.—(*A communication.*)—This invention relates to a "universal feeding movement" which consists in "confining and giving motion to the material between the face of a rotating disc or plate" arranged on the bed or table of the machine, and a roller whose axis is perpendicular to that of the plate and "radial thereto." This roller "is made adjustable to any position in a circle round the centre of the said disc to vary the direction of the seam in lines on any side of the needle, whether the motion be imparted to the material from the revolving disc or bearing roller."

The second improvement is only applicable to two thread machines. It consists in "providing for any slight variation of the direction of the motion of the shuttle that may be necessary to bring the shuttle in proper relation to the needle, by fitting the shuttle with grooves to run upon two parallel ways or guides that are adjustable laterally on a box or block, which is adjustable in a direction perpendicular to the adjustment of the said ways or guides."

[Printed, 8d. Drawing.]

A.D. 1857, January 26.—Nº 233.

JOHNSON, JOHN HENRY.—(*A communication from J. E. A. Gibbs.*)—This improvement consists, firstly, "in so constructing and arranging the machine as to form the chain stitch by the

" aid of a stationary hook," which is placed below the cloth table in such a way as to catch the thread from the needle "when the latter is guided thereto by a projecting guide for that purpose." Secondly, "in producing the feed motion of the fabric by means of a hook attached for that purpose to the needle head or carrier;" thirdly, "in the application of a peculiar clamp, so constructed that it will hold the fabric securely down upon the cloth table during the whole operation of forming and tightening the loop, and relieve it from pressure at the moment the feeding of the fabric is to be performed;" fourthly, "in a mode of guiding the needle properly at the moment it enters the fabric." "The loop is formed by the needle passing the thread over the hook, where it remains until the next descent of the needle through the loop last formed, which is then drawn off."

[Printed, 8d. Drawing.]

A.D. 1857, March 5.—N° 642. (* *)

BARDIN, JEAN LOUIS FRÉDÉRIC.—"A new mode of ornamentation." This "invention consists in stripping off from natural feathers the outer or elastic pellicle, cuticle, or coating, and in forming therewith ornaments for the head, artificial flowers, embroidery, woven or other fabrics, or any other article of ornament. The pellicles may be stripped off and shaped by any suitable machinery, and coloured by any suitable colouring matter."

[Printed, 4d. No Drawings.]

A.D. 1857, March 14.—N° 728.

MACDONALD, ROBERT.—(*Partly a communication.*)—(*Provisional protection only.*)—Sewing or embroidering fabrics in the following manner. "The sewer or embroiderer first of all makes whatever stitches may be necessary in the actual body of the muslin or fabric to be embroidered, and then in working the figure upon the surface of the fabric, the embroidering needle being entered into the fabric and having its point or front end uncovered, the sewing or embroidering thread is passed one or more times round the front projecting end of the embroidering needle, so as to partially cover it in the manner of a covered or lapped wire. The sewer now draws the needle out of the body of the fabric, and this action causes the coils or turns of the

" thread upon the needle to slide off the needle and become re-
" tained in a solid mass upon the uncoiled part of the thread, the
" coils or turns being, in fact, transferred from the needle to the
" thread. This process is repeated throughout the figure or
" design being sewn, the coiling of the thread upon the needles
" being continuously alternated with actual stitches."

[Printed, 4d. No Drawings.]

A.D. 1857, March 25.—Nº 831.

HEWETT, JOHN.—(*A communication.*)—This invention is based upon two patents taken out by A. E. L. Bellford in 1854, 1855, numbered 2618 and 2442 respectively. They both relate to inventions in which the thread of the needle is passed over a thread case or a looper. In the first case the loop is passed over the thread case by "a lateral motion of the needle, or by a motion of " the point of the thread case." In the second the loop is passed over a looper "by a motion of the needle on its axis." By the present invention the needle has "merely the up-and-down " motion." "The point of the looper (or of the thread case, " when two threads are used) is made to lie close to the needle, " and the loop of the thread is passed over it by the up-and- " down motion of the needle, without the aid of the additional " movements herein-before mentioned." To facilitate guiding the thread, "the needle is made with an inclined or spiral " groove, and a fixed hook or wire is placed near it. The cloth " or material to be sewn is advanced by means of the feeding ap- " paratus described in the second of the aforesaid specifications, " or other suitable feeding apparatus may be employed."

[Printed, 8d. Drawing.]

A.D. 1857, April 7.—Nº 974.

PEARSON, GEORGE, and JESSOP, EDWARD.—The inventors describe their improvement as follows:—"We employ a spiral " needle instead of the partly circular or straight needle at present " in use. The vertical needle forms the loop in the usual way, " through which our improved spiral needle carries the under " thread about an entire revolution, and there remains until the " vertical needle descends through the cloth or material to be " sewn; the spiral needle then moves in the opposite direction, " leaving the under thread round the said vertical needle, thereby

" forming the stitch." The shaft of the spiral needle is actuated by means of a cam on the driving shaft, which cam works a lever, the end of which is connected with the needle shaft by an endless band or by a rack and pinion, thereby giving a to-and-fro rotary movement. "Upon the needle shaft or tube we place a "spiral cam, the threads of which work upon a fixed wharve or "roller, so that as the needle shaft or tube revolves backwards "and forwards it has also a lateral movement imparted to it to "allow the vertical needle to descend behind the under threads."

[Printed, 10z. Drawing.]

A.D. 1857, April 16.—N° 1074.

SUGDEN, THOMAS, and FREDERICK.—This improvement relates to machines which form the "chain stitch." For the under thread a bent needle is used which in shape resembles the letter L. This needle has a to-and-fro motion imparted to it parallel with the advance of the work or across it. The said needle is in two parts, each of the above shape, and only differing in that one of them has an eye. One of these parts is fixed to the shaft while the other slides on it in a direction away from the fixed part. At each stroke when a stitch is formed, this improved needle enters the loop, the two parts being then together; the sliding half of the needle then moves outwards, "opening out the "loop of the upper needle and also the loop of the under needle, "carrying the under thread round the vertical needle, which, as "it moves downward, forms the stitch." The inventors also claim "an improved feed motion, consisting of a beam or lever "vibrating on a pin at about the centre, and placed under the "upper plate of the machine, one end of the lever being actuated "by a cam on the driving shaft, and the other connected to the "feeding plate." An arrangement for giving the vertical needle a backward and forward motion, and a needle guide by which the loop may be so placed that the under shall not fail to enter it, are also alluded to.

[Printed, 1s. Drawings.]

A.D. 1857, April 22.—N° 1133.

JOHNSON, JOHN HENRY.—(*A communication.*)—This invention relates to machines using two threads, one worked by a vibrating needle, the other by a rotating hook or shuttle case.

The vibrating needle arm has an auxiliary lever so contrived that "when the needle arm descends to enter the needle into the cloth, "the auxiliary arm rises and draws the upper thread, which is "passed through an eye in its extremity." Under the bed plate is an oblique driving shaft for working the needle arm, which receives motion from any convenient source through a cam or driving pulley. This shaft also works the feed motion. "On the "extreme end of this shaft is fitted a driving plate for imparting "a rotatory motion to the discoidal shuttle or spool case, which "revolves freely in a circular race or holder. The spool case and "race are not at right angles to the shaft or parallel to the plane "of the driving plate, which latter is fitted with projections or "pins taking into corresponding holes in the spool case, so as to "transmit a rotatory motion thereto when the driving plate "revolves. By placing the spool case at an angle, the pins will "leave it on one side as it revolves, and will allow of the play of "the needle and passage of the needle thread without interruption." The spool case carries the spool in its centre, and "is "formed with two noses, between which a recess or throat is left, "so that the needle thread may be caught on the revolution of "the spool case, and by being carried round the two threads, "namely, the needle thread and the spool thread, will be inter- "locked and form the stitch desired." The spool thread passes through a tension regulator fitted to the centre of the spool. The needle thread is tightened by the auxiliary lever, previously alluded to, when the needle is at its lowest position. "An elastic "and durable seam is formed by so arranging the apparatus that "a long forward and a short backward shuttle stitch may be pro- "duced, and this is accomplished by making the cloth move only "every second stitch, whilst during the intermediate stitching the "needle is thrown backwards to enter the cloth behind the first "stitch, in order to make a long forward and a then a short back- "ward stitch." Another peculiarity in this invention consists "in drawing up the slack loop formed by a circular shuttle, by "the operation of such shuttle on the succeeding loop, so that "the expansion of one loop will tighten the other; and for this "purpose, the loop which is being tightened is held in such "a manner that it may be released or contracted in proportion "as the other loop is being expanded, thereby preventing it from "twisting. These circular shuttles may be so arranged that they "will take up the loop on one side and throw it off on the other,

" and the hooks and bills may be made to turn only one half revolution for each succeeding stitch."

[Printed, 2s. 8d. Drawings.]

A.D. 1857, April 23.—N° 1143.

DUNNETT, MATTHEW.—Improvements in embroidering machinery. "The form of the ornamental details embroidered upon the fabric or material is produced either by the movement of the frame carrying the fabric or by that of the frame or frames carrying the needles." The fabric is stretched upon a frame, and if the design is produced by the movement of the fabric, this frame is made moveable in every direction in the same plane. If the fabric be stationary, the design is produced by a similar movement of the needle frame. The pattern is drawn on an enlarged scale, and as the attendant follows this design with a pointer or tracer, the movement is communicated by a series of levers on the pantograph or eidograph plans, to the fabric or needle frame as the case may be. The frame carrying the fabric or the needle frame "consequently moves in accordance with the motion of the tracing point over the pattern, the movement of the fabric" or needle "bearing a relation to that of the tracing point depending on the proportion between the eidographic details by which the movement is imparted." The needle is pointed at both ends with a central eye. "Each needle is held in a clip or holder, which brings it up to and passes it through the fabric, causing it to enter into an opposite clip or holder on the opposite side of the fabric. The first clip then relaxes its hold upon the needle which is firmly held by the opposite clip, and is drawn through the fabric by the recession therefrom of this last clip."

[Printed, 1s. Drawing.]

A.D. 1857, April 24.—N° 1160.

CLARK, WILLIAM.—(*A communication.*)—This invention has reference to an improved embroidering machine. The principle of the machine is as follows:—The fabric to be embroidered is strained in a frame which is suspended vertically in the centre of the machine and which is worked from a pantographic apparatus. On each side of the fabric there is a carriage carrying the needles arranged in tiers one above the other. These needles are pointed

at each end, and have central eyes. They are held in clips and passed from one carriage to the other through the fabric. The necessary movements are performed by treadles.

[Printed, 2s. Drawings.]

A.D. 1857, May 2.—N^o 1246. (* *)

WILEY, WILLIAM EDWARD.—“Improvements in boxes or cases “for containing needles, leads for pencils, pens, and other “articles.” Each box is made with one, two, or more compartments according to the nature and shape of the articles contained therein. On the upper end is a tabular chamber having holes through it corresponding in position with the compartments. Over this chamber is a curved cover which has also corresponding holes. “This cover is capable of rotating over the upper cylindrical chamber,” and is connected with the ends of it by turning the ends of the cover “into the recessed ends of the chamber.” The covers may be arranged to move with “sufficient friction to “prevent their motion, except when forced to move by hand, “or they may be held by springs or other catches.”

[Printed, 8d. Drawing.]

A.D. 1857, May 15.—N^o 1373.

WHITAKER, FREDERIC.—The first part of this invention consists in the application of an instrument “used in the manufacture of looped fabrics, and known as the ‘needle or hook and presser,’ in combination with an eye-pointed needle” to sewing machinery. “This arrangement of ‘needle or hook and presser’ “is used in all cases below the work or fabric to be stitched or “tamboured.” “For this purpose the eye-pointed needle carries “a loop of thread through the fabric or work, this loop is caught “by the aforesaid instrument (which moves parallel with the line “of sewing), and retained until the next descent of the eye-pointed needle, which instead of passing the second loop “through the first in the act of descending as heretofore, is “caused to complete its descent before the second loop is passed “or drawn through the previous one; the result is the production of the ordinary tambour stitch.” The second part consists “in so arranging the said instrument in combination with two “eye-pointed needles, both working from the upper side of the fabric or work, & each carrying a thread for the purpose of

" producing a double row of stitching, the under side of which " will have the appearance of beautiful embroidery." Thirdly, " in so timing the motion of the instrument that it shall not " require any apparatus above the fabric for taking up the " slack formed by the descent of the needle. The instrument " is caused to recede not only so far as to draw the last loop " tight, but also to draw the slack formed by the descent of the " needle below the fabric, and more, by its reverse movement to " again give out the slack thread the moment the eye-pointed " needle has reached the surface of the fabric."

[Printed, 8d. Drawing.]

A.D. 1857, May 20.—N° 1414.

FOULKES, ABEL.—Machinery for sewing or pointing gloves. This invention refers chiefly to the ornamentation of the backs of gloves sometimes called the " French point," which consists of three plain seams, each stitched along both sides. A sewing machine is used having a groove in the table " along which the " seam previously made moves along while it is being stitched " round." Without this groove, the seam cannot be evenly and accurately performed. " This groove or a portion of it may " be made in a moveable plate fitted into or sliding in the table, " and other plates with grooves at different distances from the " needle may be inserted when required." The groove may also be made in the under surface of the claw feeder. The raised seams are produced " by placing a raised guide on the table in " proximity to the needle, and employing a one-sided feeder, or " a feeder with one side removed." " The folded leather or other " material is kept in contact with the guide while the seam is " formed, it is then opened and the seam passed along the " groove" " to produce the stitching on each side of the raised " seam."

[Printed, 8d. Drawing.]

A.D. 1857, May 21.—N° 1437.

NEWTON, WILLIAM EDWARD.—(*A communication.*)—(*Provisional protection only.*)—The essential feature of this invention consists " in making a stitch with a single thread by throwing " a shuttle and thread through a loop formed from the same " thread, thereby tying or knotting each stitch."

[Printed, 4d. No Drawings.]

A.D. 1857, June 9.—N° 1618.

MUMBY, GEORGE.—This invention comprises the following eight details:—

1. “Embroidering, by forming a looped or piled design on any suitable material by means of a needle receiving a compound motion, and in connection with a supporting wire if necessary. These loops, attached to the material by the sewing apparatus, may be afterwards cut by suitable means.”
2. “Fixing the embroidering machine to a moveable lever in order to place the embroidering needle in any required position.”
3. Attaching braid or trimmings to fabrics “by means of a guide fixed to a shoe through which guide the braid or trimming passes from a bobbin to the material, to which it is fixed by the sewing apparatus.”
4. “The employment of one or more vibrating needles or thread carriers for producing a braid on a fabric, and for forming a stronger stitch when used for sewing purposes.”
5. An adjustable shuttle driver for regulating the throw of the shuttle in its race.
6. Winding thread on a bobbin by fixing it to the axis of the fly wheel.
7. “Tightening the feed or shuttle thread of sewing machines by a flat or round spring, or by passing it round a wire.”
8. Guide and oscillating lever for assisting the sewing of edging on to cloth or other material.

[Printed, 1s. Drawing.]

A.D. 1857, June 13.—N° 1661. (* *)

KING, JOHN.—(*Provisional protection only.*)—“Improvements in the manufacture or production of collars, cuffs, and similar articles of ladies’ dress.” “In proceeding to carry out this invention, the block or roller impressions of the desired ornamental figures are given to the collar and cuff material in the piece, each impression being disposed at the requisite distance from its neighbour, so that the individual collar and cuff pieces can be afterwards cut out as required, preparatory to making up for use. The ornamental figure is thus entirely given by the block or roller printing action, the figure being suited exactly to the contour or shape of the article operated upon,

“ and the blocks or rollers being specially cut for the purpose.
“ Sewed work or embroidery may be used in connection with the
“ printing processes referred to.”

[Printed, ~~42~~. No Drawings.]

A.D. 1857, July 15.—N^o 1971.

JOHNSON, JOHN HENRY.—(*A communication from J. E. A. Gibbs.*)—According to one arrangement of this patent it is proposed to sew with a single thread by means of a needle and revolving hook, “each loop of the stitch being twisted half a revolution after it has been drawn through its predecessor.” Motion is communicated to the machine from the cloth which is drawn through it by hand. The cloth is pressed on the roughened periphery of the driving wheel which communicates the motion it receives from the fabric to the machine through shafts and pulleys in the usual way. By means of these drums or pulleys the speed may be varied, and consequently also the length of the stitch. The needle is jointed to the vibrating arm so as to allow of the lateral movement due to the movement of the cloth while the needle is in it. “The shaft which carries the needle cam is fitted “ or formed into a hook at its front end, such hook being of “ peculiar construction. It is gradually increased in thickness “ from its point which enters the needle loop towards its shank “ or shaft, and is concavely shaped at the part where the needle “ loop is in contact with it, for the purpose of not drawing more “ thread than is requisite; after the loop has thus been drawn “ open it will slip off the hook and lodge in an angular recess “ which the hook forms with the shaft. This is effected whilst “ the hook revolves from a horizontal to a vertical downward “ position, such motion giving a twist to the loop through the “ aid of a ‘spur’ or ‘cast off’ on the back of the hook. This “ ‘cast off’ is so arranged in relation to the hook and angular “ recess that the loop is spread for the nose of the hook to pass “ through it on taking a fresh loop from the needle. At this “ moment the hook has two loops engaged with it, the fresh loop “ at the point or nose, and the preceding loop, which now bears “ against the convex part of the hook. The further motion of “ the hook will allow the latter loop to slip off entirely from the “ hook, which loop is drawn tight by the opening or spreading “ off the new loop.” According to the second arrangement the

inventor dispenses with the revolving hook and substitutes a revolving thread case, carrying a second thread or not according to the kind of stitch required to be made. "By means of this "thread case, and by reversing the direction of the feed" the inventor is enabled "to make three different kinds of stitches in "the same machine, namely, the ordinary chain or tambour "stitch with one thread, a locked tambour stitch having a running thread passed through the loops, and the ordinary shuttle "stitch. The thread case is of a lenticular shape, the periphery "of which is notched out at diametrically opposite sides, so as "to form two hooks pointing in the same direction. The rotary motion is imparted to the thread case by means of a "toothed pinion gearing into holes or notches made near the "periphery of the thread case." In the third modification, "a "hollow spherical or other conveniently shaped thread case "having a ball of thread inclosed therein, such ball having no "fixed axis of rotation" is used. This thread case is moved with a reciprocating motion, the axis of rotation being permanent and coinciding with the hole through which the thread issues. "The thread case is encircled at or near its largest diameter by a "plate or belt having two hooks facing each other in a plane "perpendicular to the axis of rotation. This plate is guided by "running in a stationary circular groove, an opening being left "between the inner circumference of the guide and the outer "periphery of the revolving plate, so arranged as to allow the "needle to pass at the proper time at every alternate revolution "of the thread case." In making the stitch one hook catches the loop, made by the needle after passing the cloth, and causes it to pass round and over the thread case, when the needle is again brought down and the second hook takes the loop and passes it in a contrary direction round the thread case, thus forming a locked stitch.

[Printed, 1s. Drawing.]

A.D. 1857, August 4.—N° 2110.

JOHNSON, JOHN HENRY.—(*A communication.*)—(*Provisional protection only.*)—This invention consists—

1. In driving the circular needle of certain machines by means of an elastic driver working up and down in a spiral groove on the vertical spindle to which the needle is attached.

2. "In forming a flat or straight portion on the vertical spindle, " for the purpose of holding the circular needle stationary whilst " the driver continues to move the required distance."

3. In making this driver of several layers of spring metal to make it elastic.

4. The needle lever is bent in the form of a D, one limb being under the cloth table, the other above and carrying the needle. The pivot is in the centre of the bend and the driver works on the lower limb.

The use of india-rubber to deaden the sound in sewing machines is also claimed, and a new friction driving arrangement is described.

[Printed, 4d. No Drawings.]

A.D. 1857, August 4.—N° 2111.

ILES, CHARLES.—This invention consists in lining thimbles with a non-metallic lining, "so as to prevent the finger in wearing the thimble from coming in contact with the metal of which the thimble is made." The use of vitreous or semi-vitreous substances is preferred, but the inventor does not confine himself to such materials.

[Printed, 4d. No Drawings.]

A.D. 1857, August 13.—N° 2160.

BOUSFIELD, GEORGE TOMLINSON.—(*A communication.*)—"Improvements in sewing needles." This improvement consists in constructing the needle with an opening to the eye from the side, so that the needle may be threaded at any part of the thread, or in other words it is not necessary that the point or end of the thread should be passed through the eye. The sides of this opening close together again after the thread has been forced in, and yet the entrance is so formed as not to catch in the work.

[Printed, 6d. Drawing.]

A.D. 1857, September 29.—N° 2496.

SMITH, EARLE HARRY.—(*Provisional protection only.*)—The first part of this invention relates to the cams used in sewing machines, and which "are apt to wear loose and rattle." The inventor makes the cam "in two parts, to be brought up towards

" each other until the edges take rollers one above the other on " the arm to be moved; the one roller taking one side, the other " the other side of the cam, which is to be of larger diameter." The shuttle is annular in shape, with a circular or alternating motion, and the needle is caused " to continue to rise while the " shuttle passes through the loop, so as to lift the said shuttle and " avoid friction." The thread passes out of the shuttle " as near " the point of motion " as possible. " The thread passes through " a stationary guide near the upper end of the needle bar in such " a manner that the rising of the needle bar above the said guide " pulls the thread tight drawing it through the eye of the needle." The feed motion is a toothed plate in the bed, and a pressure pad above the cloth. By a suitable contrivance the shuttle passes the loop with a fast motion while the needle rises slowly and vice versa. The shuttle thread is clamped, and a crank motion for drawing up the slack is provided.

[Printed 4d. No Drawings.]

A.D. 1857, October 3.—Nº 2537. (* *)

RILEY, WILLIAM, and RILEY, THOMAS.—" Apparatus for " saving or covering the lists of textile fabrics previous to the " dyeing of such fabrics." This invention relates to the covering " of the lists or edges of textile fabrics by machinery, to prevent their taking the dye during the process of dyeing such fabrics. This has heretofore been done with the hand by sewing a " web " or binding over the edge or list of the fabric. " On suitable " framework we arrange rollers, over which the fabric is caused " to travel with the webbing to a series of guides or apparatus, " which in succession turn up the edge or list of the fabric and " webbing, and by degrees form a fold, lap, or roll on the edge of " the fabric with the webbing outside, thus forming a binding or " covering to the list."

" Reciprocating motion is given to a needle supplied with suitable thread, which is caused to pass through the fabric at or " about the inner edge of the fold or roll, when a fork or other suitable instrument takes hold of the thread and holds it until " the needle is withdrawn, and which then carries or turns the " thread in a loop around the fold or edge of the fabric to a point " on the other side, where the needle will pass through the loop " previous to its next insertion into the fabric, and thus links the " last stitch with the succeeding one, the fork or other instrument

" again taking hold of the thread when passed through the fabric,
" carrying it around the edge or list, as before, and so on."

[Printed, 1s. 6d. Drawings.]

A.D. 1857, October 21.—N° 2688.

NEWTON, ALFRED VINCENT.—(*A communication.*)—By means of this invention the inventor proposes to produce a stronger seam than has been heretofore accomplished. To do this he forms what he terms a "double back stitch," in the following manner :—" Pass a loop of thread through the fabric to be sewed, then pass through the fabric and through the first loop (from the same side of the fabric as the first loop) another loop from another thread, then pass through the fabric another loop from the first thread, through its own first loop and the loop of the second thread. This stitch is obtained by means of two needles working at such angles to each other that they cross beneath the table and work through each other's loops. The holder of one of these needles works in parallel vertical guides as usual, and the other, or that of the diagonal needle, in a slotted guide, which permits of its swaying to and fro under the action of the slide of the vertical needle to which it is connected, and the counter action of a spring attached to any convenient part of the machine."

The holder of the diagonal needle is so connected with that of the vertical needle, that it is dependent upon it for its motion, and so it cannot fail to work isochronously with it. Suitable stops are provided to limit the vibratory motion of the diagonal needle, and to sustain the needle against any extra pull of the cloth.

To make the single thread or "tambour stitch," it is simply necessary to remove the thread from the diagonal needle, "when it immediately becomes a simple looper to take the thread from the vertical needle."

In the second part of his Specification the inventor claims the following :—" So arranging and applying a needle or looper, or any equivalent device for completing or assisting to complete the stitch began by the vertical needle, that it shall derive its motion from the needle holder or its equivalent; and this I claim, whether the motion of the needle holder is communicated to the other needle holder or looper through a lever or its

“ equivalent, or by means of the vertical needle, or by “ any other device in which the motion of the second needle or “ looper is dependent on the movement of the other needle “ holder.” Then follows a description of various methods of accomplishing the above; and then a contrivance for regulating the length of stitch is thus described:—“ A pin on the vertical “ needle holder during its descent forces down one end of a rock “ lever, to which the stitch regulator is jointed, and lifts the “ regulator. During its upward motion a spring attached to “ the regulator comes into action, and gives the regulator a “ backward movement. The extent of this retrograde movement “ is governed by a set screw, which passes through a guide in “ which the regulator works, the regulator striking the extremity “ of the screw at each stroke; when the motion of the needle is “ reversed, the spring forces the teeth of the regulator upon the “ fabric that lies below it, and causes it to hold or bite the material “ being sewed. As soon as the needle has risen clear of the cloth, “ the latter is drawn along (by the hand of the operator) until its “ movement is stopped by the regulator coming in contact with “ the end of its guide.”

The Specification also includes a feeding hook, which is either “ a straight arm terminating in a single sharp hooked point, or “ a forked arm terminating in two sharp hooked points.” This feeding hook is suspended from a pin in the stand, and is actuated by the “ combined action of a wiping cam piece attached to the “ needle bar for the purpose of wiping against the pendant lever “ which carries the hook at every rise of the needle bar, and by “ a spring, which throws back the lever against a stop attached “ to the stand. The points only catch the cloth during their “ movement in the direction to which they incline, but when “ moving in the opposite direction they slide over the surface.”

[Printed, 1s. 8d. Drawings.]

A.D. 1857, November 23.—N° 2933.

NEWTON, ALFRED VINCENT.—(*A communication.*)—In this Specification it is stated that “ the fabric is fed forwards by the “ backward and forward traverse of the table, or of a horizontal “ slide attached to the under surface of the table.” “ The same “ device which feeds the fabric is also caused to flatten and place “ *the loop formed under the cloth by the thread of the single*

“ needle machine in the proper position for receiving the vertical “ needle on its next descent, so as to produce the well-known “ chain stitch.” The traversing slide is serrated, so as to hold the fabric, and a serrated foot holds the cloth down on the table. “ The slide receives its traverse motion from a vibrating bar, “ operated by a crank pin on the driving shaft. This bar, therefore, communicates the motion for the feed, and for flattening “ and holding the loop. Instead of being attached to the table “ or a slide, it may effect the flattening and holding of the loop “ by means of a notched spring jointed to the under side of the “ table of the machine.”

“ When it is desired to make the double loop stitch (which requires the use of two threads), the slide or its equivalent is dispensed with, the feed being effected by a rocker above the table, and a second needle is employed, the same being secured “ to the vibrating bar or lever before mentioned in such a manner “ as to work and take up the loops formed by the thread of the “ vertical needle.” In connection with the above-named rocker, “ when a single chain stitch is required, it is proposed to employ “ a sliding piece below the fixed table, fitted with a hinged lip, “ which will admit of the needle (after it has passed down into a “ hole made in the slide to receive it) passing out laterally with “ the thread which it carries.” This slide, like the one previously described, is intended to prepare the loop, and it is also operated in a similar manner.

[Printed, 10d. Drawings.]

A.D. 1857, December 24.—N^o 3157. (* *)

ADDERLEY, SAMUEL HENRY.—(*Provisional protection only.*)—Improvements in the manufacture and ornamentation of pencil cases, penholders, needle cases, and other tubular cases. A rod or mandril is employed somewhat less in diameter than the pencil case to be made, of any convenient length, and either cylindrical or prismatic. Upon the mandril are coiled alternate layers of linen or cotton fabric and paper, both being overspread with paste. “ After the tube thus made is dry, its figure is perfected “ by drawing it upon its mandril through a suitably formed draw “ plate. The tube is then saturated with linseed oil and dried in “ a stove, afterwards varnished and dried again. It is next “ *ornamented by japanning or varnishing, gilding, and painting,*

" or by attaching thereto by means of gold size or other adhesive material, pieces of shell either alone or combined with metal."

[Printed, 4d. No Drawings.]

1858.

A.D. 1858, January 7.—N° 28.

GRAHAM, ELIZA.—(*Provisional protection only.*)—This invention relates to an apparatus for facilitating the threading of needles. It consists of an extremely fine bar of steel perforated like a needle, and hinged at one end to a flat piece of metal, wood, or other material. This flat piece has a groove cut in it into which the steel bar fits accurately, and it is, moreover, perforated with a hole in that part of the groove which corresponds with the eye in the steel bar when in the groove. A thread from a reel, or otherwise, may then be passed through this aperture and the eye of the "threader." "The eye of the needle to be threaded is then guided by means of the groove over the point, and down to the base of the 'threader,' in its course passing over the thread which has been previously drawn through the 'threader' and doubled; the short end of the thread being then disengaged, the needle is repassed up the 'threader' over the single thread only, and the operation of threading is complete." A loop of catgut or other material attached to a very fine flat needle is used by the inventor to draw the thread through the "threader" upon a similar principle, "the thread being doubled through the loop and so drawn through till the short end becomes disengaged."

[Printed, 4d. No Drawings.]

A.D. 1858, January 16.—N° 74.

MACBETH, GEORGE.—(*Provisional protection only.*)—This invention relates to a guide or feeder for sewing machines, by which the edges of fabrics are bound or covered with braid. The apparatus for the purpose "consists in a conveniently formed or curved guide, which is adjustable upon the framing of the machine, and placed immediately before the vertical needle, so as to deliver the fabric thereto; this guide is curved, the end

“ farthest from the needle being of a width to admit the full width of the binding ‘braid’ or ribbon, and gradually tapered towards the needle to about half the width. The edges of the guide being turned inwards to retain the edges of the ‘braid,’ it will be evident that by the braid passing through this guide it will be gradually doubled or folded round the edge of the fabric, which also passes between the grooved or tapered end of the guide, and as the fabric is delivered from the guide with the ‘braid’ properly fixed around or enclosing its edge,” the needle descends and secures them together.

[Printed, 4d. No Drawings.]

A.D. 1858, January 16.—N° 78. (* *)

DE LA BROSSE, CHARLES AMEDÉE DE LAIRE.—(*A communication.*) — “ Improvements in apparatus or machinery for the manufacture of looped or knitted fabrics.”

“ By the apparatus or machinery arranged according to these improvements, stockings and other articles when they come from the machine are sewn into the proper shape.” The same principle of making the seams by the machinery “is applicable not only to the particular circular machine herein described, but also to other circular knitting machines. The system of sewing can also be made useful for ornamenting and otherwise sewing the fabric produced in knitting frames or machines.”

The “sewing apparatus” works upon pivots, the sewing needle being carried by a rod which “has an alternating rectilinear motion in a hollow cylinder.” “The sewing needle places itself in a space left for that purpose, and in its return movement it is caused to act by means of a coiled spring fixed at the back part of the sewing apparatus. The “stitch is sewn at the moment that the needle comes against a presser,” and the descending movement is caused by an incline,” placed on a support at a suitable height. The whole of the mechanism is minutely described.

[Printed, 10d. Drawing.]

A.D. 1858, January 20.—N° 97. (* *)

MUIR, WILLIAM.—“ Improvements in stands for letter-copying presses and other small machines.”

The invention consists "in making the bottom plate of letter-copying presses with recesses or holes to receive the legs of the stand, also in making such recesses or holes in a plate or frame on which a copying press of the usual construction is placed and held between ribs or otherwise." The legs of the stand are made by preference of iron, and may be connected by stretchers or by the supports for the drawers, or by either or both. "Such stands may also be employed to support sewing machines, lithographic presses, knife-cleaning machines, and other small machines, such as have hitherto been fixed upon tables."

[Printed, 10d. Drawing.]

A.D. 1858, February 1.—N^o 185.

BROOMAN, RICHARD ARCHIBALD.—(*A communication.*)—This is a patent for improvements in sewing machines, consisting in the use of a needle having a barb at its point instead of the usual eye, also in the means of actuating the said needle so that its movement shall also perform the duty of feeding the material, and in regulating the vibration of the needle in order that various lengths of stitches may be obtained. "The needle is secured to the end of a needle bar, which latter plays up and down beneath the table in a vibrating guide piece. At its lower end the needle bar is connected with a crank, the rotation of which gives both the up-and-down motions to the needle as well as its vibratory motions." A screw pin, which is vertically moveable in a slot in the frame upright, secures the upper end of the needle bar. Between the needle bar and the upright of the framing is a circular plate, having a spiral slot cut in it. The before-mentioned screw pin which secures the upper end of the needle bar works in this slot, so that if the disc be partly revolved from left to right, the fulcrum of the needle bar is brought farther away from the cloth table, and consequently, as the point of the needle works beyond this end of the needle bar, its angle of vibration of the needle becomes increased, and the stitches are therefore longer. Above the table is a cloth presser "capable of being raised and lowered by a set screw." "The foot of this pad has a long narrow slot in it, cut in the direction of the feed of the cloth; the said slot stands directly over the needle, so that when its point ascends above the table, that point will enter the slot; at one side of the slot is an eye, through which the thread is rove for sewing." In operation the needle is raised by the

motion of the crank through the cloth, and then, as the crank moves on, it commences to be withdrawn, "but at an angle the reverse of that at which it entered, thus moving along the slot in the pressure pad, and carrying the cloth which is held between it and the table also along with it, thus forming the length of the stitch. As the needle reaches its greatest height the end of the barb, having risen above the pressure pad, seizes the thread through the eye by the act of changing its angle of position, the said thread now lying across its path. The barb is then closed by being pressed into the shank of the needle, so that it can pass out of the cloth." "A loop of thread is thus drawn through and held on the shank until the next stitch is formed. As this is being taken, the closed end of the barb passes through the former loop, and that is accordingly cast off, and the last one drawn through it and held upon the needle shank forming the well-known chain or tambour stitch."

[Printed, 6d. Drawing.]

A.D. 1858, February 4.—N° 207.

AVERY, JOHN.—(*A communication from James Hanley.*)—*(Provisional protection only.)*—An improvement in mechanical movements for sewing machines.

"Many sewing (and other) machines are worked by cams, so that the sewing or other work can only be effected when the cams work in a certain direction, and in some cases when a crank is used, and the machine has been stopped with the crank on the wrong side of its centre; the wheels in connection are moved backwards in the restarting, to the injury of both the machine and the work. To obviate this injury, and to prevent machines moving or working in any but the required direction, I adapt thereto a roller (in conjunction with the fly wheel or other governing part of the machine), moving in a conical recess, and brought into action either to hold or release automatically by the friction of its surface contact with and by the motion of the machine."

[Printed, 4d. No Drawings.]

A.D. 1858, February 12.—N° 271.

NEWTON, ALFRED VINCENT.—(*A communication.*)—This invention relates to a single-needle sewing machine of the class

alluded to in the former patent, No. 185, 1858. The needle bar is worked under the table by means of a crank and in combination with it "an oscillating guide-way is used for the purpose of " guiding and sustaining the upward vertical motion of the " needle, and at the same time by its adjustment regulating its " leverage to determine the length of stitch and feed motion. " In the rear of this guideway, and secured thereto by an adjust- " ing screw, is a stitch regulator plate having a graduated curved " opening in it. The adjusting screw passes through the upper " end of the oscillating guideway, through the graduated curved " opening in the stitch regulator plate and through a vertical " slot in the standard" of the framing. An elastic cloth presser is used, and on the edge of the slot in it through which the needle works there is an eye for the thread. " Upon the inner " edge of the slot" there is also a small projection "for the " purpose of closing the hook or barbed point of the needle " while moving down with the thread to form the stitch."

[Printed, 8d. Drawing.]

A.D. 1858, February 12.—N° 272.

NEWTON, ALFRED VINCENT.—(*A communication.*)—Machinery for stitching button holes. In this machine an ordinary needle is employed, and to prevent the unthreading of the needle during work the short end of the thread is twisted round the main length. If this be not sufficient the use of a needle with two or more eyes is suggested. "The needle is placed eye " upward in a pair of pincers above the bedplate of the machine " and immediately over a needle tube, which is carried by a pinion " that is also provided with a hook for seizing and interlacing the " thread." Below the needle tube and under the upper pincers is a second pair, which opens "to receive the needle as it descends." After an incision has been made in the cloth, it is placed in a clamp "in such a position that the slit will occupy the centre of " a slot made in the form of a button hole through the plates " forming the clamp." "As the upper pincers descend they will " force the needle through the cloth, when its point will be " seized by the pincers below the bed plate, drawing it entirely " through the cloth. As soon as the eye is below the bed plate, " a rotating arm fitted at its extremity with a projecting pin will " bear against the thread and draw it through the cloth, lapping

" it at the same time around a fixed circular band or hoop during " which operation the cloth holder will be moved, so as to " permit of the ascent of the needle eye foremost, the point being " held by the lower pincers through the slit in the cloth, and the " pin on the rotating arm having let go the thread to permit of " this ascent. The next revolution of the driving gear causes " the descent of the needle with the upper pincers, and as soon " as the point is through the cloth at the proper position, the " hook on the pinion which carries the needle tube catches up " the thread which intervenes between the circular band or hoop " and the cloth, and passes it round the needle, permitting its " escape from the hook after the needle is so far progressed as to " prevent the return of the thread to its former position." The thread is then tightened by means of a spring of " such strength " as to slip the thread as soon as each looping is tightened."

The clamp is moved and reversed by a suitable contrivance.

[Printed, 1s. Drawings.]

A.D. 1858, February 13.—N° 275. (* *)

DUNCAN, JOHN.—(*Provisional protection only.*)—"The manufacture of ornamental chenille fabrics, in such manner and with such results as to bring out the effect of goods embroidered or worked by the hand in relief. In preparing for the manufacture of ornamental goods in this way, the operator first of all manufactures the necessary chenille weft in the required colours, in such a way as that the thread or foundation upon which the chenille is made shall have bare spaces at certain predetermined intervals " " regulated by the paper pattern, according to which the fabric is to be worked."

" The chenille weft so produced is then woven into the body of the piece to be ornamented by arranging harness to suit the intended figure.

" Such ornamental chenille goods are available for various uses, but in particular as 'furnitures' for the imitation of embroidery." The prepared chenille may be woven in as a warp to produce a generally similar result.

[Printed, 4d. No Drawings.]

A.D. 1858, March 6.—N° 450.

BARTLEET, ROBERT SMITH.—Improvements in needle cases. *The inventor constructs his needle case from a rectangular piece*

of paper, in which he first makes "a semicircular slit or incision, " in that part of the papers in which the heads of the needles "will be situated when the paper is folded." When the paper is folded the edges are pasted. There is thus formed a case, having "a small semicircular flap or tongue, in which case the needles are "inserted; the upper and lower pasted portions of the paper "constituting a flap and tuck, which, when folded down over the "case engage with one another."

[Printed, 6d. Drawing.]

A.D. 1858, March 15.—N^o 522.

BROOMAN, RICHARD ARCHIBALD. — (*A communication.*) — This invention relates, 1st, to the looper, 2nd, to the feed motion, and 3rdly, to the tension regulator, in single-thread sewing machines.

1st. "The looper consists of a hook fixed to the end of a "spindle or shank and shaped in a particular manner; this is "placed beneath the table with its spindle in an inclined "position, the box in which it is held being a long bearing to "keep it firm." The shank of this looper is placed at an angle with the bottom of the table so that, in vibrating, the looper crosses the needle's path and so opens the loop.

2nd. "The feeding mechanism consists of a vibrating bar, "having a curved foot roughened on its under side." It is vertical and works on a pin carried by the usual bracket. "The "needle passes through the foot." "As the curved foot is at "one side of the bar the vibrations of the said bar move the foot "excentrically along, whereby its curved part will descend "toward the table while going in the direction intended for the "feed and will rise from it in the opposite direction." The needle is out of the cloth when the feed takes place, "the "roughened surface taking hold in consequence of the moving "at that time of another bar," "the needle then entering "the cam which gave the feed motion, gets clear, and the "roughened surface is returned by the force of a spring pressing "upon the last-named bar." "The adjustment for different "lengths of stitch is accomplished by a set screw, which limits "the extent of throw of the roughened foot."

3rdly. "The tension apparatus and the carrier for the spool "are combined together and attached to the head of the needle "bar. It consists of an arm extending from a post which has a

" screw cut upon it, and upon which screw the arm can be turned.
" The outer end of the arm has a spindle turned downward to
" hold the spool, the latter being kept on by a nut. There is
" also a pinch nut to set the arm and keep it from moving after
" the right tension has been obtained. In the arm first-mentioned
" there is a branching piece, through which there is a hole to pass
" and guide the thread upon the tension post. By this arrange-
" ment no take up for the slack is requisite, as the whole moves
" up and down with the needle."

[Printed, 8d. Drawing.]

A.D. 1858, March 20.—N° 577.

HARRIS, DANIEL.—This patent comprises four improvements in sewing machines.

(1.) The looper. This consists of a small flat piece of steel having two cams or projections at its edge. One of these cams is intended to act as a guide for the needle, so that the hooker, which is also a hooked projection at right angles to the plane of the flat piece, may not fail to engage with the thread. As soon as the hooker has seized the thread from the needle, it carries it on a little and then the second cam engages with a fixed spring attached to the under side of the cloth table. This engagement causes the looper to perform a slight lateral motion, which has for its object the transference of the loop from the hooker to a fixed stud by the side of the aperture in the cloth table. The looper then travels laterally to its former position, so spreading the loop round the needle aperture. The needle then descends and the looper commences to slacken the thread and ultimately releases it. "The release of the loop at this particular time, viz., "when the eye of the needle is just entering the cloth with the "thread for a new loop, allows the needle in its further descent "to take up the slack of the previous loop, thereby "finishing one stitch by its' first movement in making the "next."

(2.) The feed motion.—The patentee says, "I claim commun-
" cating to the feed finger (from the needle carrier in its vertical
" movements), intermittent forward and backward motions by
" causing a pin or projection from the needle carrier to work
" between two nearly parallel inclines, one of said inclines being
" adjustable for the purpose of giving a greater or less vibration
" to the lever to which the inclines and feed finger are attached."

(3.) The tension of the thread.—In order to give the requisite tension to the thread and at the same time to obviate the necessity of re-winding the thread upon a special bobbin, the patentee has devised the following arrangement:—On a convenient part of the frame an upright spindle is fixed. This spindle is tapped at its upper end for a set screw, and at about midway a hole is drilled through it for the passage of the thread. To use it, a thick washer of india-rubber or some such elastic substance is placed on the stem, and on that there is placed a thin washer of parchment. These washers are now on a level with the thread aperture. Then the thread is put through its aperture, another parchment washer imposed upon it, and then another india-rubber one, and finally the set screw at the top gives the requisite pressure. Thus the thread runs between two parchment discs having two rubber discs outside them.

(4.) The last improvement relates to the driving arrangement.—Here the inventor does away with the ordinary driving band, and instead, substitutes a thick india-rubber band or tire on the fly wheel. This tire works against a similar but smaller one carried on a small pulley attached to the framing of the machine. Thus the machine is driven by the friction of the large wheel against the smaller.

[Printed, 1s. Drawing.]

A.D. 1858, March 20.—N° 586.

NEWTON, ALFRED VINCENT.—(*A communication.*) — Improvements applicable to sewing machines “in which a needle “with an eye near the point is used to carry the thread,” and in which a single thread is used either by itself or in combination with another “interlaced with it by a shuttle or some “equivalent device.”

(1.) The employment below the table of “a pair of elastic “nippers” constructed of watch spring or some such material, the jaws of which meet only at their points. These nippers “are carried by a sliding bar that has a to-and-fro reciprocating “motion.” As the needle descends it passes downward through the opening between the jaws; the nippers are then drawn back and as they pass the needle they open, and close again, of their own accord, immediately on clearing it. Thus they seize the *thread* and so draw it from the needle to form a good loop for *the passage of the looper or shuttle.*

(2.) The next improvement consists in "the use of a looper of a novel description operating in combination with a needle having an eye near the point to sew with a single thread in what is known as the chain or tambour stitch." This looper resembles somewhat in appearance a pair of nippers "being composed of two prongs jointed together by a pin which attaches them to a sliding carriage plate that works in guides on the under side of the table." "One of the prongs of the looper is continued in rear of the joint pin, and forms a lever for rocking the looper on its centre pin, the lever being operated by striking against a fixed stop during the traverse of the sliding plate." "The prongs of the looper are sharp-edged or pointed at their extremities, one being made a little longer than the other to prevent the thread being caught between the prongs. Near their ends they are bowed so as to permit of the needle striking down between them, and they are kept closed by means of a spring pressing on the lever prong." "A stationary finger" or stop is provided on the opposite side of the needle "to prevent the loops from being pushed out of place." When the looper has entered the loop far enough, "the needle descends through the looper striking into the space between the prongs, the looper then recedes, the prongs opening to allow it to pass the needle, and leaving the loop on the needle stem." "The return of the needle & thread takes place during the retraction of the needle, and causes another loop to be retained within the first one, which is drawn tight as the needle completes its advance."

[Printed, &c. Drawing.]

A.D. 1858, April 14.—N° 811.

JOHNSON, JOHN HENRY.—(*A communication from Samuel Comfort, junior.*)—"This invention relates to certain improvements in that class of sewing machines wherein a locked or two-thread stitch is produced." "According to this invention a lateral vibratory motion is imparted to the needle arm and shuttle race in contrary directions by means of a rocking frame actuated by a crank pin, and having its centre of vibration between the needle arm and shuttle race, such centre coinciding with the surface of the cloth table. An upward and downward motion is also imparted to the needle, which is curved simultaneously with its lateral vibratory motion by means of suitably

“arranged levers actuated by the same crank pin which gives motion to the rocking frame.” A discoidal shuttle is used which is confined by suitable projections within the shuttle race, which, in its turn is carried by the lower portion of the rocking frame. The shuttle is also prevented “from jumping in “the race by the action of a slight spring upon the thread spool, “the same spring serving to maintain the spool within its shuttle “or case.” The feed is given by the lateral vibratory movement of the needle, which latter is supported during that time by a groove in the shuttle race. “As the level of the cloth table is “in line with the centre of vibration of the rocking frame, there “is really no lateral motion of the needle at that part which “coincides with the level of the cloth table, and therefore it is “requisite to raise the cloth more or less above the table, accord-“ing to the length of stitch required.” This is accomplished by contriving that such portion of the cloth table through which the needle passes shall admit of being elevated above the remainder and fixed in position by a set screw. The eyes in the framing and levers for the passage of the needle thread from the bobbin to the needle are so arranged that the needle arm, when it rises, carries with it the slack. It will be seen from the preceding “that the object of the lateral vibratory motion of the needle “and shuttle race is to impart the requisite feed motion to the “cloth, and to enable the needle to pass its loop laterally across “the shuttle, which always remains stationary, whilst its race, “with the needle, moves to-and-fro beneath it.”

[Printed, 8d. Drawing.]

A.D. 1858, April 16.—N° 824.

HODGES, JOHN GARDINE.—(*Provisional protection only.*)—This invention is for an embroidering machine, the chief feature in which is that the table upon which the work is placed is caused to move in any direction by connecting it with a pattern model. Or, if preferred, the table may be stationary and the needles by their change of position may give the required pattern.

[Printed, 4d. No Drawings.]

A.D. 1858, April 17.—N° 845.

JOHNSON, JOHN HENRY.—(*A communication.*)—This Specification contains details of several improvements relating to sewing machines, namely :—

(1.) An improvement in "working the curved or circular vibrating needle or hooked instrument used in a certain class of sewing machines for passing a second thread through the loop formed by the needle which penetrates the cloth." This is accomplished by means of a "shaft or stem" attached to the instrument, and "having two spiral grooves or projecting ribs formed thereon." "In combination with these double spirals a vibrating driver is used, which embraces or surrounds the stem, . . . so that as it rises or falls alternately it will impart to the shaft or stem a reciprocating circular motion."

(2.) An improved cloth presser, which consists of a bay with a curved foot working vertically in a slide at the end of a fixed bracket. A spiral spring is contained within a recess in the front of this fixed bracket "and bears at one end against the top of this recess, whilst its other end rests upon a bracket formed out of the body" of the presser. At the top of the slide, on the bracket, is a bent lever, like a cam or rolling wedge. This cam prevents the presser being thrown out of the slide by the force of the spring and it also permits the raising of the presser from the cloth if necessary.

(3.) This section "relates to a mode of mounting and guiding the straight needles of sewing machines, whereby greater steadiness and precision of movement of the needle is obtained . . . and the oil employed for lubricating the needle slide is effectually prevented from being thrown upon or brought into contact with the work." "The improvement consists in attaching the straight needle to a hollow cylinder or stem, in the hollow of which is fitted, to work accurately and freely, a fixed rod or spindle serving as the guide for the hollow needle holder or slide. The upper end of the hollow needle holder is expanded slightly for the purpose of receiving" the lubricant, channels being contrived in the face of the spindle to assist lubrication.

(4.) An improved method of "mounting circular or discoidal shuttles," and "a peculiar construction and arrangement of apparatus for driving the same." The usual race is in this case dispensed with, "the shuttle being supported merely by a number of pins taking into corresponding holes near the rim of the shuttle. These pins slide in and out of a rotating driving plate which is secured to the end or made in one piece with the shaft which actuates it." "A cam groove is made in a plate forming part of the bed plate, and in this groove

" number of studs work, such studs being secured by set screws " to the sliding pins before referred to. On rotating the driving " plate the studs on the pins will travel round the cam groove " and as each pin successively arrives at a particular portion of " the groove, which is of a smaller radius for that purpose, it is " drawn back out of the shuttle, so as not to interfere with the " needle, and the loops to pass freely."

[Printed, 1s. Drawing.]

A.D. 1858, April 19.—N° 850.

DRAKE, JOHN, junior.—(*Provisional protection only.*)—The inventor makes use of "a hollow needle for supplying the under " thread to ordinary sewing machines." This instrument consists of a tube, one end of which is solid and pointed, while the other is provided with a screw cap. The so-called needle is capable of containing a small cop of thread. It is moreover "bent, curved " or formed into a segment of a circle of any convenient pro- " portion." A circular disc is next provided; this has a "circular " groove or trench formed in one side or face near the outer edge, " of a proper or suitable size to receive the said curved needle." The disc is so placed that "the vertical needle of the machine " will pass close to the outer circumference or periphery of the " circular needle at a point where a notch is cut in the disc " across the groove to receive the vertical needle and the loop " which is formed on the thread by the withdrawal of the " vertical needle." The circular needle makes one revolution for every insertion of the vertical needle "so that the thread supplied " by the circulating needle passes through the loop formed by " the vertical needle, one thread crossing the other at each stitch " consequently producing a stitch on each side of the fabric " alike."

[Printed, 4d. No Drawings.]

A.D. 1858, April 26.—N° 919.

EMERY, AARON FAULKNER.—(*A communication from William M. Horn.*)—The nature of this invention "consists in the com- " bination of a chain stitch sewing mechanism, and a mechanism " for introducing an unlooped binding thread through each loop " of the chain stitch." Accordingly in this machine there is a *circular rotating hook*, having a cavity in its centre for the spool

or shuttle of thread. This rotating hook works under the cloth table, being actuated directly by the driving shaft. During the revolution of the hook a projection on it "takes a loop from the needle, and in its onward movement the back part of the loop passes into the spiral groove, while the front part of the loop is passing across the front face of the bobbin" or shuttle. "The continued rotation of the hook causes the loop to pass entirely around the block" i.e., the rotating hook, "and to slip off the hook so as to rest in the spiral groove" (which is all round the rotating block) "and be held in a position for the hook to take the next loop through it, which having taken place what was the back part of the loop will slip between the shuttle and its seat and the whole loop be drawn entirely off the block."

The tension apparatus consists of a truncated cone fixed to the framing. Over this a conical cap or thimble fits, being adjusted by a set screw and helical spring. The thread is passed between the two surfaces.

[Printed, &c. Drawing.]

A.D. 1858, May 22.—N° 1142.

HUGHES, EDWARD THOMAS.—(*A communication.*)—(*Provisional protection only.*)—"This invention relates to embroidering so as to introduce the pattern at the same time the fabric is woven, and consists of two frames working invertedly by means of two springs passing over each other under a double pully, of a diameter proportioned to the number of teeth or cogs in a wheel, which is fixed to a cross piece adjusted to the batten. The said wheel gives motion to the machine by means of two levers, each having an independent hook corresponding to the jacquard. The frames rest on moveable feet to which strings are attached, with elastic springs to preserve the required tension. In order to produce the required pattern or design, a number of needles divided into combs are fixed to each of the said frames, the needles being supplied with the necessary materials for embroidering. On one side of the batten is fixed an escapement pully, the other side resting on the wheel, rotary motion being given to the wheel by the said pully, and two small rollers containing the materials to be embroidered are fixed behind the batten on a suitable frame."

[Printed, &c. No Drawings.]

A.D. 1858, May 26.—Nº 1185.

HENRY, MICHAEL.—(*A communication from J. Imbs.*)—The first part of this patent relates to a new fabric, in the manufacture of which a sewing machine is employed. In this machine “two sets “ of threads are used, which may be called warp and weft, the “ needles for the warp threads being arranged and combined like “ a reed or comb moving suitably in order to traverse the material, “ and making loops into which another needle, serving as a shuttle, “ inserts a weft thread. The materials are held in a rigid frame “ or guides, having an opening in the upper piece to guide the “ needles to the loop, and allow of their placing the thread pro-“ perly. The warp needles are formed with two eyes, connected “ at one side by a groove; this prevents the thread from uniting; “ and when the needle is drawn back to form a loop, the thread “ on the side opposite the groove coming against the material “ forms a regular loop, while that sunk in the groove comes down “ without forming one.” The machine may be arranged hori-“ zontally or vertically. “The material is crossed by two sets of “ threads, one lengthwise, the other breadthwise.”

[Printed, 10d. Drawings.]

A.D. 1858, June 11.—Nº 1326.

BIGELOW, LUCIUS A.—(*A communication.*)—The nature of this invention consists “in so constructing a sewing machine that it “ shall be applicable to two kinds of sewing, i. e. to sewing with a “ single thread and to sewing with a double thread.” The only change necessary in a machine of this class, to enable a second thread to be used, is that of substituting one looper for another. These loopers are flat pieces of metal furnished with suitable cams or projections, which serve to give the motions in forming the loop. Each looper has one projecting hook or point, at right angles to the plane of the flat metal looper, and it is in this hook that the distinction between the single thread looper and double thread looper exists. That for sewing with single thread has a simple hook, which seizes the loop from the needle, carries it on a little, and spreads it open for the next descent of the needle. The hook of the double thread looper is furnished with an eye, into *which the under thread is rove.* The loopers are carried at the *end of a vibrating bar,* actuated by the needle arm. There is also

a small stationary hook, attached to the cloth table, close to the aperture through which the needle works. This also serves to hold the loop while making the stitch.

[Printed, 8d. Drawing.]

A.D. 1858, June 16.—N° 1360.

ATWATER, BRYAN.—This is an invention for a machine to perform "what is usually termed chain-stitch sewing." In this machine the usual hooked loopers are done away with, suitable "guide plates" attached to the framing under the bed-plate being made use of. These plates are so arranged that the following operation of forming the loop results:—"During the down-
"ward movement of the needle the thread lies close to the front
"and rear sides of it, but while the needle is being drawn upward
"through the cloth, that portion of the thread running along
"the rear side of the needle will remain close against the needle;
"the other portion of the thread or that in front of the needle
"will be retained by the friction of the cloth, and will slacken
"below the cloth as the needle rises, and by means of " a recess
in one of the plates "will form in a loop, and be maintained in a
"proper position or be prevented from twisting out of such.
"This loop by the movement of the cloth will be tripped or tipped
"so as to receive the needle." The feed motion consists of the
usual curved cloth presser or feeding foot, which "depends from
"one end of a lever to which it is jointed." This lever is also
jointed at one end to the lever carrying the needle guide and is
depressed by a cam fixed on the driving shaft in a position diamet-
ically opposite to the crank for driving the needle. A strong
spring operates to reverse the motion of the lever after the cam has
passed, "thus causing the said lever to lift the feeding foot from or
"so remove its pressure from the cloth as to enable" a second
and weaker spring "to throw back the feeder sufficiently for it to
"repeat its operation on the cloth during the next depression of
"the lever." There is also a curved spring foot piece in addition,
which always presses on the cloth and keeps it in position during
the retrograde movements of the feeder. The patentee also claims
"an adjustable spool holder," which consists of two arms of
thin metal which clasp the ends of the ordinary reel or bobbin.
The bobbin rotates on an axis between the two arms, and a set

screw at one end of this axis serves to communicate the required tension.

[Printed, 10d. Drawing.]

A.D. 1858, June 24.—N^o 1423.

BORDAS, CHARLES.—(*Provisional protection only.*)—“Improvements in the mode or method of producing embroidery.” The inventor says,—“Firstly, I produce the desired pattern on the cloth, paper, or other material either by stamping, tracing, or printing.”

“Secondly, I take the braid, tape, or other material, and go over the pattern so formed, and by any suitable stitch, or by the satin-stitch point, I produce the embroidery, which, when finished, is easily separated from the material on which the pattern is traced, stamped, or printed.”

[Printed, 4d. No Drawings.]

A.D. 1858, August 4.—N^o 1766.

CALLEBAUT, CHARLES.—Adapting sewing machine “for sewing sails, sacks, and other strong articles, by means of supports bringing and directing the heavy materials.”

Transforming a machine sewing with one thread into one for two threads by “substituting a shuttle-holder to the hook-holder, and in making use of the rotation of the main shaft for giving the motion to the shuttle-holder by means of gears or eccentricities.”

Preventing the shuttle from ascending or jumping in its race by “making a pan in the shuttle on the side of the point, and by placing into it the crooked end of the driver.”

Modifications in the shape of the shuttle, the addition of a flat spring on the outside of the shuttle for the purpose of guiding the thread on leaving the eyes of the shuttle, “and the use of a rod and ring inside the shuttle for forcing the thread to maintain always the angle desired.”

“The application of a stopping branch and bridles, destined to stretch” the thread in tightening the knot. “This stopping branch is drawn by the needle-holder when descending, and it is stopped before the said needle-holder has entirely accomplished its ascending movement.”

" The disposition and shape of the click serving to move the fabric." " It is worked by means of an eccentric placed upon the upper main shaft; it may be grooved or hollowed, so as to allow the sewing of rounded parts, such as the edges of hats, &c."

" A hollow made in the plate, called needles' guide, which allows to use threads relatively stronger, and avoids the necessity of cutting them."

" The use of needles perfectly round, the flutings being made with a burin or cutter" is alluded to. The use of a pressure roller worked by a pedal for starting, stopping, or regulating the speed of sewing machines, so that any motive power may be employed.

" Working the shuttle and hook by means of a connecting rod placed upon the main shaft, instead of an eccentric."

" The disposition of a tool completing the machine, and destined to make the special needles."

" This tool consists in a pincer for holding the needle, a cutter for making the flutings, and a punch for making the holes."

In addition to the above, the inventor claims the following:—The use of several needles side by side, small metallic bands being placed between them to prevent puckering of the cloth. " Each needle has its thread, and underneath the loop or knot is formed by a shuttle or its equivalent."

An arrangement of parts by means of which a knot is made at the end of a certain number of stitches, where only a single thread is used, to prevent the drawing out of the thread. This is accomplished by causing the needle to " descend again in the same hole as in its preceding movement."

[Printed, 10d. Drawing.]

A.D. 1858, August 21.—N^o 1904.

BROOMAN, RICHARD ARCHIBALD.—(*A communication.*)—(*Provisional protection only.*)—" This improvement relates to the feed motion of sewing machines, and consists " in causing the cloth to progress by mechanism acting so as to grasp the cloth between the surfaces, and give the feed without the aid of spring pressure." This is done by means of " a slide bar so connected with the foot that while imparting a positive motion at each feed, it yet provides for self-adjustment to meet the

" requirements of different thicknesses of materials as well as for " going over seams." In order to obviate the tendency of one surface of the cloth to slip upon the other piece, " a section of the " table directly under the place where the foot acts" is made capable of sliding backwards and forwards in the line of the feed. " Both surfaces thus move along together, thereby causing both " pieces of cloth to travel alike."

[Printed, 6d. Drawing.]

A.D. 1858, September 7.—N^o 2024.

BRIND, FREDERICK WILLIAM. — (*A communication.*) — This invention relates to various parts of sewing machines, in which " the stitch is produced by the conjoint action of a needle and " vibrating shuttle."

The needle is carried by a vibrating arm, actuated from the main driving shaft by means of a link and revolving crank. The spool is carried on an arm projecting from the back end of the needle arm. The shuttle is carried in a recess at the end of a vibrating arm, which receives motion from a hanging lever worked by the same crank that actuates the needle arm. " The shuttle " case vibrates in a curved rail, so formed as to close the upper " side and back of the case, which is notched at one end to " admit of the shuttle being readily withdrawn and replaced, " whilst the other end is entire for the purpose of driving the " shuttle." There are two kinds of feed motions described. The first consists of a bar pivotted to a bracket under the table. This bar is raised to the cloth and vibrated by a cam and a pin on a small wheel. The length of the stitch is adjustable by a stop. The second consists of a " vertical vibrating lever, the upper end " of which carries two inclines, so that one shall elevate the feed " bar, and the other impart the feed motion thereto through the " intervention of a stud pin, projecting from the under side of " the feed bar." There is a spring foot provided above the table to press the cloth. There is also a lever to take up the slack thread.

[Printed, 6d. Drawing.]

A.D. 1858, September 22.—N^o 2128.

KENNEDY, FRANCIS FARREKNER. — (*A communication from Sherburne (in New-York).*) — This is an improvement applicable to

machines in which the loop from the needle is passed over a bobbin carrying another thread. The feature of the invention consists in "the mode of operating the hook about the bobbin, " viz., with a compound motion, produced by a crank and an " arm or by two cranks, whereby the point of the hook is made " to travel either in an elliptical or a circular path without being " reversed or made to point upward and downward during its " rotation." The bobbin, which consists of two dished discs of metal riveted together at their centres, is carried in "supporters" made of thin metal. These "supporters" are fitted with a cast-off projection and a guide lip; also with a spring to press upon the upper part of the bobbin and force it toward the "supporter" with the projections. All these latter arrangements are intended to assist in taking on and casting off the loop. The inventor also describes a particular mode of constructing the hook.

[Printed, 8d. Drawing.]

A.D. 1858, September 30.—N° 2175.

MORRISON, JOHN.—An apparatus for doubling or turning over the edges of fabrics previous to sewing. It consists of two strips of metal, placed at a sufficient distance apart to allow the fabric to pass. These plates "are twisted into a screw-like form." "When the edge of the fabric to be sewn is inserted between the "said twisted plates or strips, and drawn in the direction of their "length, the said edge of the fabric following the twist of the "plates or strips becomes folded over or doubled, the amount of "folding or doubling being determined by the number of turns "made by the screw-like plates." Suitable guides are arranged to assist the folder in seizing the edge of the fabric properly.

[Printed, 8d. Drawing.]

A.D. 1858, October 20.—N° 2344.

TWELLS, THOMAS.—This is for a machine to be used in embroidering. It consists of a needle having a single barb, which pierces the cloth or other fabric. In doing so it passes into the interior of a bobbin, which revolves and lays the thread in the barb of the needle. As the needle is withdrawn a pair of "pressers" compress the barb, so that the needle is not hindered in retiring through the cloth, and so carries the thread with it. The needle takes the thread doubled through the fabric, the

material moving in any required direction, and forms what is known as the looped or tamboured stitch. The apparatus for working the needle is so contrived that the back of the barb always points in the direction of the feed of the cloth. In making separate or detached patterns, a knife or cutter is added for severing the thread while it is held in front of the fabric by a pair of forceps.

[Printed, 3s. Drawings.]

A.D. 1858, December 7.—N° 2801.

MADDERS, WILLIAM, and WADDINGTON, JOHN.—(*Provisional protection only.*)—Improvement in piercing materials to be embroidered.

"In the ordinary embroidering machines, where stilettoes are used to pierce the holes in the fabric, the said holes have been heretofore made all of the same size on account of all the stilettoes having been forced the same distance through the fabric." By the improved arrangement the holes are made of different sizes, as may be required; and this is effected "by fixing two or more stops or catches on the frame of the machine or other suitable arrangement, so as to stop the carriage at any stated point, or to regulate the distance it must move, and thus also regulate the distance the stilettoes must pierce the fabric." The stilettoes are conical, therefore the holes are larger or smaller, according to the amount of penetration by the stilettoe.

[Printed, 4d. No Drawings.]

A.D. 1858, December 16.—N° 2887.

MACKENZIE, ALEXANDER.—(*Provisional protection only.*)—Various improvements applicable to certain parts of sewing machines.

Firstly, an arrangement for communicating the to-and-fro motion to the horizontal "circular needle," used in certain machines by means of a vibrating arm, fitted at one end with a "segmental toothed rack" which engages with a pinion on the stem which carries the needle.

Secondly, the feed motion, which consists of a horizontal bar "capable of both a longitudinal and lateral movement" springs being fitted for this purpose. "From the central portion of this feed bar there projects up through an aperture in the platform a vertical arm with a roughened or serrated top piece, over

" which the fabric is passed." A cam on the main shaft works the bar. There is also a stitch adjuster attached to the feed motion.

Thirdly, the needle-bar and its movement, together with an arrangement for securing the needles in their carrying bars.

Fourthly, a provision for traversing the fabric in " curvilinear " or differential line sewing." " For this purpose a disc wheel " cut or formed on its periphery in accordance with the intended " line of sewing to be produced in the manner of the surfaces " employed in the turner's ' rose engine ' is fitted up in the " gearing of the machinery, so as to bear during its revolution " upon the movements in connection with the feeder."

[Printed, 4d. No Drawings.]

A.D. 1858, December 29.—N° 2974.

CARTER, EDWARD WILSON, and ABRAMS, JOHN DODSWORTH.—(*Provisional protection only.*)—This invention comprises various applications of springs to the shuttles of sewing machines for the purpose of keeping them steady in their races; also the use of a " circularly curved race " for the purpose of " causing the " shuttle to move in a circular direction."

[Printed, 4d. No Drawings.]

A.D. 1858, December 30.—N° 2991.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from B. G. Dutel.*)—Embroidering machine. In this machine the stitch is made by means of one needle and one hook. The needle, which is placed under the fabric, " is slightly bent back, " in order to allow the hook taking the thread from this needle " to form a loop. The hook placed above the fabric directs the " second thread in such manner as to form a knot above the " fabric. Over the fabric is a small instrument called a pusher " (poussette), intended to prepare the loop formed by the hook, " in order that the needle, in again rising, may not fail to " seize the thread. Under the fabric is another instrument, " called a thread grip (serre-fil), intended to tighten the knot " formed above the fabric every time the hook recedes and " previous to the descent of the needle."

[Printed, 10d. Drawing.]

1859.

A.D. 1859, January 10.—N° 78.

TOMS, THOMAS HARRIS.—Ornamenting fabrics by sewing on to them, in suitable patterns, “braid manufactured from mohair “coiled or wound round a central core or cord in undulating “thicknesses, so as to produce the same form and character as “the well-known coronation braid.”

[Printed, 4d. No Drawings.]

A.D. 1859, January 17.—N° 141.

NEWTON, WILLIAM EDWARD.—(*A communication from Elias Howe, junior.*)—An improved method of working the shuttle in sewing machines, by which the old way of driving by applying force at each end of the shuttle is avoided, and the consequent amount of play between the shuttle and the drivers is rendered unnecessary.

“The shuttle of the machine is formed of thin metal pointed at “one end and terminating at the other extremity in a rounded “butt, to which a projecting lip is secured in such a manner as “to form a socket between the said lip and the butt of the “shuttle, into which socket the end of a reciprocating driver is “received.” “The shuttle driver has a hammer-shaped head “which is notched at its lower side to fit loosely upon the edge “of the shuttle race, but not to touch it.” It has a vibratory motion communicated to it, and it is at the same time sustained so that there is no pressure upon the shuttle race. From the above it is clear that “the shuttle is impelled to and fro by the “action of the driver alternately against the opposite sides of the “socket formed by the butt of the shuttle and the lip.”

[Printed, 8d. Drawing.]

A.D. 1859, January 27.—N° 252.

BRADBURY, GEORGE FRANCIS, and KING, JOSEPH JACKSON.—A guide for binding the edges of fabrics by sewing machines. This guide is formed of “an internal block, surrounded by an ex-“ternal case, having a space between them through which the “tape, braid, or binding passes until it arrives at the end of the

" block, when it is drawn at or near right angles to the space " through a curved groove at the end or side of the block of the " desired form and size of the exterior of the binding, leaving the " interior free to cover the article to be bound, and held close to " it until the stitch is made." "The guide is fastened on a plate " having in it vertical pegs, between which the tape, braid, or " binding is passed in order to obtain the necessary tension." A modification of the guide is also described.

[Printed, 8d. Drawings.]

A.D. 1859, January 31.—N^o 274.

RAYWOOD, JOHN.—This improvement consists "in a more " certain method of securing the thread of the loop in forming " what is called the chain or tambour stitch." The looper, which works horizontally under the cloth table, is actuated directly from the vertical piston carrying the needle. The movement of the looper in describing the horizontal arc gives a species of cam movement to a small vibrating lever which draws the thread aside from the needle and so assists the looper in forming the loop. The action of the arrangement is as follows:—"We shall suppose " the piston about to descend, the looper is at that moment in " that position where the end of the hook is pressed within " a countersunk hole formed under the face of the table, "and hold- " ing the loop formed during the previous stroke; as the piston " descends" motion is communicated to the looper, "and by the " time the needle in its descent has passed through the fabric, " the looper has completed the arc through which it oscil- " lates, leaving the loop open for the needle to pass through; on " the needle beginning to ascend, the looper is caused to " oscillate through the same arc back again, the hook passing " through the double in the thread, and forming another loop " which it holds close within the countersunk hole in the bottom " of the table until the return of the needle, when oscillating " back again, it sets the loop free, and directly in the course of " the needle's motion, so that it easily passes through it."

The piston carrying the needle works vertically in stuffing boxes.

A "feed motion," which the patentee claims, is also described.

[Printed, 10d. Drawing.]

A.D. 1859, February 1.—Nº 289.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from J. P. Pirsson.*)—This invention has reference, firstly, to an improved feed motion and stitch regulator, and, secondly, to an improved method of drawing the loop from the needle in double or single thread sewing machines. The feed motion consists of a bar “curved at the lower end toward the needle.” “This bar “has a vibratory motion upon a pin near its upper end, and its “lower end is drawn out into the form of a blunt chisel.” The pin “passes through a vertical slot in the said bar in order that “the bar may have also reciprocating motions.” The vibratory and other motions are given by a cam, a bell-cranked lever, and springs.

The apparatus for opening the loop consists of a hook of metal, pivoting at the end of one (the straight) arm. The other arm is curved in the segment of a circle, and the back, or convex side of this curved arm is fitted with a flat spring, so bent that between the point where it bears upon the arm and the point of attachment to the arm, there is a space. This mechanism acts as follows:—When the needle descends, the curved arm advances and rubs its convex side against it; thus the needle passes between the arm and the flat spring into the before-mentioned space. Then the arm moves back and the needle passes out again, as it came in, between the spring and the arm, leaving the thread held gently by the spring, thus opening the loop.

[Printed, 10d. Drawings.]

A.D. 1859, February 12.—Nº 407.

NEWTON, WILLIAM EDWARD.—(*A communication from James Stebbings Moody.*)—(*Provisional protection only.*)—“The first part “of this invention relates to the manner of drawing the thread “through the fabric after the stitch has been completed and the “required tension given to it.” To do this “a double pointed “needle” is used, passing backwards and forwards through the fabric, and held by suitable holders. “The loose or free end of “the thread is drawn through the fabric by means of a hook or “hooks attached to a travelling endless band.”

“The second part of the invention consists in alternately gripping and releasing the needle from the needle bars as it passes “back and forth.”

The third part "consists in the arrangement of an adjustable " presser foot " to guide the needle to the upper needle bar, " and to press the thread against the needle" to give the tension. " This machine can form any stitch that is made by the hand " by adjusting the feeder, and the several parts for operating the " feeder."

[Printed, 4d. No Drawings.]

A.D. 1859, February 15.—N° 422.

JONES, JOHN THOMAS.—The sewing machine described in this specification consists of an open frame having a platform top upon which the sewing is performed. Under this platform, and near one end, is a horizontal driving shaft carrying a long crank, a connecting rod from which is joined at its opposite end to the shuttle driver. This "shuttle driver or slide piece" works in a horizontal guide beneath the table. The driving shaft has "also " another and shorter crank upon it, the stud pin of which is " connected to the pin of the longer crank by an overhanging " link piece, provision being made for the adjustment of the re- " lative positions of the two cranks, as regards their sequence of " revolution ; it is this shorter crank which actuates the needle " movement, the pin being entered into a differentially slotted or " operated cam piece, forming the pendent lower end of a bent " lever working on a stud centre in the interior of the overhead " bracket or pillow arm of the framing. The centre on which " this lever works is in the horizontal part of the overhead " bracket arm and its opposite or free working end has a " rectangular slot in it to embrace a rectangular block of metal " working freely upon a lateral centre stud upon the vertical " needle carrying bar; in this way the needle has imparted " to it differential a reciprocating vertical movement." The feed motion consists of a lever working on a pivot at its lower end. The upper end is toothed and works through an aperture in the table, so pressing the fabric between itself and a spring presser above the table. The vibratory movement of the lever is effected by the shuttle driver at the commencement of its return. The spring presser is capable of adjustment, and may be raised from the work, as desired, by means of a cam lever. "In " working a duplex arrangement two needles and two shuttles are " used, each needle and shuttle working independently. To aid

“the shuttle action there is attached to its side a flat curved blade spring, one end of which is free, but hooked into a hole in the body of the shuttle. Thus as the shuttle traverses forward the sewing thread is drawn beneath the hooked end portion of the spring so as to be nipped against the shuttle. With this arrangement the needle can never work on the wrong side of the shuttle thread.” Provision is also made for securing an independent shuttle thread controller.” Instead of fixing a horizontal shuttle race to the framing, “the shuttle driver is itself made the race or carrier.” When a shuttle race is used it is quite independent of the machine, “so that it can be changed at any time to suit various sized shuttles.”

[Printed, 1s. Drawing.]

A.D. 1859, March 5.—N° 582.

PARKER, FREDERICK WILLIAM.—This invention is best described in the words of the inventor as follows:—“I employ a needle with an eye near the point, and attached to a piece of metal sliding up and down in a guide, and driven by a crank or other suitable means. The needle moves up and down through the work, which is laid upon a table with a hole for the passage of the needle in the usual manner. Below the table is a hook or looper, capable of turning on a horizontal axis or spindle, which has also an end motion. When the needle has passed through the work and commences to rise again, the thread bends or bows out at its side, and the hook is then passed through the loop thus formed. The spindle of the hook or looper receives an end motion as soon as the looper has passed by the side of the needle, and the looper is thus caused to hold or present the loop in a line with the seam so that the needle is sure to pass through it on its next descent. When the needle has thus entered the loop, the looper slides endways and partially turns on its axis, so as to bring it back to its original position.”

[Printed, 1s. 4d. Drawings.]

A.D. 1859, March 17.—N° 674. (* *)

JOHNSON, JOHN HENRY.—(*A communication from Messrs. Sulzberger and Graf.*)—(Provisional protection only.)—“Improvements in machinery or apparatus for folding and stitching sheets of paper.”

" The sheets to be folded are laid upon a table, above which is extended, in a horizontal position, a knife edge or flat blade, which, in descending, forces the sheet into a slit across the table and carries it down below the table between india-rubber or other sustaining bands in a doubled state. A second blade in a vertical position then advances and forces the once folded sheet through a second narrow slit or opening which effects the second fold; and, lastly, a third blade, which is horizontal, and at right angles to the last one, completes the third fold, and forces the folded sheet between a pair of pressing rollers, which finally deliver it at the side of the machine. The first folding blade is attached at one end to a vertical sliding bar or rod, which is connected by a chain to the periphery of a pulley below. This pulley is caused to rotate and so wind up the chain and depress the blade by a pinion and toothed segment; and when the pulley is released the blade is instantly elevated again by the action of a helical or other spring. The second blade is rigidly fixed to a horizontal rack, which is caused to advance by a spur pinion worked by a toothed segment, and is drawn back again after the fold is completed by a spring. The third blade is pushed forward for the purpose of effecting its fold by a cam, and is then drawn back by a spring, as described in reference to the first and second blades. Moveable register points are employed for insuring the proper position of the sheet beneath the first folding knife or blade. When required, the sheet may be stitched ready for the binder immediately before the final fold is accomplished, and the stitching is effected by means of two needles supplied with thread from a suitable holder, which is arranged to impart the requisite tension thereto. The length of thread required is drawn out of the holder by a thread carrier, which grips the end of the thread, and then moves outwards a certain distance so as to draw the proper length out, which is cut off by a pair of scissors."

[Printed, 4d. No Drawings.]

A.D. 1859, March 24.—N^o 748. (* *)

WILEY, WILLIAM EDWARD.—"Improvements in the manufacture of boxes or cases for holding needles, pins, pencils, and other articles. The boxes are of a tubular figure wholly or

mainly of metal. In manufacturing some of them two cruciform or wing-shaped blanks are formed into tubes one for the body the other for the lid. A piece of smaller tubing for the lid to slide on is fixed by soldering or other means to the body, and into the top of the lid and bottom are inserted "circular discs of paper " or other sufficiently soft and rigid material." The boxes are finished by being covered with plain or other paper. Others are made by soldering a series of tubes round a central rod or tube; the lower end is closed by a disc, the upper end by a cover turning freely on the central tube. In one of the compartments a small bolt works, pressed to its bearing by a spring. The neck of the knob of the bolt passes through a slot, and the cover is fixed by the bolt passing through a hole therein. The contents of each compartment are removed by bringing the hole opposite to the open end thereof. Other boxes are made by bending a plate of corrugated metal into a cylinder and fixing a tube on each side of it. The inner tube is closed at top and bottom by discs, and the ends of the compartments by covers turning on an axis. These covers have each a hole in them (as in the last-described boxes), and are fixed by a sliding bolt entering the same. The contents of the outer compartments are removed through the hole in the lower cover. The other boxes are made of V-shaped bars disposed radially upon a central tube; the cover is fixed by the bent end of a pin or rod which enters a hole in the same. The bolts and pins may be substituted by a plate placed upon the cover and capable of turning thereon. In the plate is a hole which must be brought opposite to and coincide with the one in the cover before the contents of any compartment can be removed.

[Printed, 8d. Drawing.]

A.D. 1859, April 5.—N° 849.

HASELTINE, GEORGE.—"Improvements in sewing machines."
"The stitches are formed by two arms or hooks in connection
"with the needle attached to a pinion which revolves within a
"receptacle in front of the needle. . . . The base plate, pressure
"and needle bars, are similar to those now in use, the fulcrum of
"the needle bar is situated below the base plate, and extends
"forward to the excentric, which gives the required motion to
"the needle." This excentric also actuates the arms or hooks.
"The feed motion is obtained by a self-adjusting cam, which

" produces the feed while the needle is descending, in whichever direction the machine may be rotated. . . . In the receptacle in front of the needle is situated the under spool or bobbin. A small projection extends over one side of this receptacle with a perforation for the needle to enter for the purpose of steadyng it while the thread is carried around the bobbin by the arms or hooks. These hooks or arms are so constructed and arranged that they take the thread from the side of the needle opposite the bobbin." The knot stitch "is formed by the hooks taking the thread and carrying it around the bobbin in the direction opposite to that in which the material is moved. To form the double lock shuttle stitch the hooks are rotated in the opposite direction. The hooks are connected with an adjustable piece, so that they may be adapted to any size needle, simply by turning a screw. When the needle has passed through the material the hook or arm takes the thread as stated, and by its rotation carries it nearly around the bobbin, and then casts it off. It is thus coiled around the thread from the bobbin, either with a single turn forming the double-lock stitch, or a perfect knot is tied forming this peculiar knot stitch. Two hooks or arms are necessary, and they are situated nearly opposite each other."

The inventor also illustrates a hemmer in his drawings.

[Printed, 1s. Drawings.]

A.D. 1859, April 21.—N° 1008.

CLARK, EDWARD.—(*A communication from Isaac Merritt Singer.*)
—"Improvements in sewing machinery."

This invention comprises the following parts :—

1. "Securing two or more needles in the needle carrier by making the said carrier with a mortise, and fitting to and combining therewith a series of blocks with parallel sides grooved to receive the needles, and clamping the whole by a clamp screw or equivalent therefor."
2. "Combining with two or more needles one or more tongues" attached to the bed of the machine, "that is one tongue extending into the space between any two needles to form a bed or support for the cloth between the needles and to resist the tension of the threads in drawing the stitches." There is also added a "supporting plate extending under the end of the tongue or tongues," but not in contact therewith. The object of this

supporting plate is to give support to the cloth on both sides, and in case of accident, or in case of sewing refractory materials, to prevent the over-bending of the tongues.

3. "A vibrating thread carrier, which after the needles are drawn up, or while they are being drawn up, carries a single or compound thread or cord or braid across on the upper surface of the cloth, and in front of the needles or needle threads, so that when the feed motion advances the cloth to space the stitches, and the needles are carried down to make the next stitches, they descend in front of the thread or cord so laid on the surface, and thereby secure it."

4. Two guide plates to be used in "forming seams when one or both pieces of cloth is or are lapped or folded over to make a flat seam."

5. "Attaching the tube guide for holding the hem to the bar of the presser foot by a yielding arm, having sufficient space between the upper surface of the presser and the hem guide for the passage of the cloth, whereby the folding is effected in closer proximity to the needle."

6. Operating the feeding instrument "by a single lever, one end of which is connected therewith, and which lever is mounted on a universal joint, and is acted upon at the other end by two cams."

[Printed, 1s. Drawing.]

A.D. 1859, April 25.—Nº 1038.

NEWTON, WILLIAM EDWARD.—(*A communication from Robert Halsted Morford and Anthony Denton Morford.*)—"Improvements in sewing machines."

This invention relates—

Firstly, "to the employment, for the purpose of driving the needle of a sewing machine, of a rocker which is applied in combination with the needle bar or other needle carrier, and with a crank on the main shaft of the machine, in such a manner as to admit of imparting to the needle, after causing its protrusion as far as necessary through the cloth or other material being sewed, the required movement to commence the formation of the loop in its thread, and afterwards to allow the shuttle sufficient time to pass through the loop before the loop is drawn tight."

Secondly, "to a peculiar mode of working the shuttle driver
" after it has completed its advance to drive the shuttle through
" the loop of the needle thread, and before its retreat to com-
" mence a new stitch, a slight backward movement and then
" a return forward movement is given to it, the backward move-
" ment being sufficient to remove the driver from contact with
" the heel of the shuttle, so that the loop of the needle thread
" may pass freely over the heel, and the return forward move-
" ment being for the purpose of tightening up the shuttle thread
" simultaneously with the tightening of the needle thread to
" complete the stitch."

Thirdly, "to the employment of two springs and a slide, for
" the purpose of producing a greater or less friction, and conse-
" quently a greater or less tension upon the needle thread."

Fourthly, "to the employment of an auxiliary adjustable thread
" guide for the purpose of governing and adjusting
" the amount of needle thread for each stitch."

Fifthly, the presser foot, wherein the use of "a spring or other
" means of producing a yielding pressure on the holding-down
" or feeding pad of a sewing machine may be dispensed with.
" This object is effected by the employment of a vertical sliding
" unyielding pressure bar and a jointed holding-down and feeding
" pad."

Sixthly, to a bobbin holder for the shuttle. The bobbin is held
between two plates drawn together by a spring, whereby a certain
amount of friction is put upon the bobbin.

[Printed, 8d. Drawing.]

A.D. 1859, April 28.—N° 1064.

KIDD, JOSHUA.—(*Provisional protection only.*)—This relates to
a machine in which the plain or lock stitch may be produced, and
also the loop or chain stitch.

Firstly, to produce the plain stitch. The needle slide is perpen-
dicular, and is moved by a vibrating arm shaped like a bell crank.
This, in its turn, is moved by a crank pin, attached to the main
shaft and working "in a sickle-shaped slot or cam on the lower
" end of the said arm." The upper half of this slot "is straight
" and nearly perpendicular, and the lower half curved in the same
" radius as the crank pin which works in it;" thus the crank pin

makes a quarter of a revolution without moving the arm. "The centre part of the said cam where the straight part unites with the curved part has a sudden turn outwards before the radius of the curved part commences, which gives it the sickle shape, and by which means the needle arm raises the needle sufficiently to form a loop before it rests to allow for the locking of the stitch." The shuttle driver, under the bed of the machine, is propelled by means of the same crank by the same quarter of a revolution during which the needle arm rests. "The shuttle moves in a race formed in the shuttle plate, the edges of which are grooved; the shuttle is formed in the shape of a boat without sides, with projections similar to keels on its flat and on its round surface, which fit into the grooves of the race."

"The feed motion is obtained by means of a perpendicular bar, with a shoe at its base, hanging on a centre at the back of the needle slide, and is kept down upon a cloth by a spring, its motion being obtained by a horizontal crank beam above it, which is moved by the needle arm and needle slide; this beam moves the feeder by means of a connecting rod." "The length of the stitch is regulated by an eccentric guide bar working on a centre."

Secondly, to form the loop stitch all that is necessary is to remove the shuttle and to place a needle in its place, and also to give the "same a slight lateral motion."

[Printed, 4d. No Drawings.]

A.D. 1859, May 3.—Nº 1111.

BLAKE, LYMAN REED.—This relates to a machine for "sewing a sole on a boot or shoe." The nature of the said invention consists, first, in arranging the shoe rest on the end of an arm or projection to extend from the table or supporting frame of the machine, and be capable of entering the shoe and introducing the said rest into the toe, and other part or parts of the interior of the shoe."

Secondly, "in arranging the thread passage or the looper, or both within, or so as to operate with the shoe-supporting arm."

Thirdly, "in the application of the feeding mechanism to the needle or its carrier, so as to enable the said feeding mechanism

" to be revolved around or with the said needle and its carrier, in
" order to change the direction in which the shoe is to be fed
" along while it is in the process of having an outer sole sewed
" upon it."

[Printed, 10d. Drawing.]

A.D. 1859, May 12.—N° 1189.

FOXWELL, DANIEL.—"Improvements in sewing machines."

The inventor says:—

" First, I employ an improved arrangement of parts for
" actuating the needle by means of a cam, slide, rocking lever,
" and also another slide to which the needle is attached."

" Secondly, an arrangement of machinery by which two needles
" shall pierce the material on the same side one after the other,
" and by means of a peculiar forked instrument form a peculiar
" stitch, together with the spring, levers, and other requisite
" parts in combination."

No under thread is required with this machine.

[Printed, 10d. Drawing.]

A.D. 1859, May 31.—N° 1344.

SMITH, GEORGE HENRY. — This consists in improvements, firstly, in "the mode of giving the required movement to the upper and under needle, by means of one crank pin fitting slots both in the rocking lever and under needle-holder, and " also the application of a similar crank pin working in a slot in the lever of the shuttle carrier, for giving the traverse motion to " the shuttle in those machines where one is employed."

Secondly, in the feed motion which "works on a pin or centre, " attached to a presser working on a pin, adjusted according to " the thickness of the cloth to an arm projecting from the frame-work ; the said presser and feeder being operated upon by " a projection on the needle-holder, which, when rising comes in " contact with the presser, and causes the notched plate to bite " upon the cloth when feeding, but leaves it at liberty to slide " over it when returning to take a fresh stitch."

Thirdly, in providing an arrangement "for stopping the motion " when the thread breaks, by attaching the eyelet through which " the thread passes to a lever working on a pivot fixed to the " framing near the driving wheel, to which lever a bolt or stop is

“ connected, so that when the thread breaks the lever shall be
“ thrown back by a spring, and press the bolt into a recess in
“ any break wheel.”

[Printed, 1s. 4d. Drawings.]

A.D. 1859, June 2.—N^o 1354.

WOOD, SAMUEL, WOOD, JOHN, and BILLINGTON, PHILIP.
—This invention, which relates to improvements in embroidering machines, consists, firstly, in the “application to embroidering machines of an additional row or rows of needle holders, whereby compound designs can be produced more expeditiously than heretofore.”

Secondly, in stretching fabrics by means of a sliding bar and inclined planes “which act on it in two or more places, instead of by the usual tightening screws.”

Thirdly, “in jointing the levers of the pentagraph by means of centre punches and set screws, whereby greater accuracy in working is obtained.”

Lastly, “in applying spots or figures of velvet or other material to the fabric to be embroidered. To do this the inventors employ a row of needles “fixed on a swing rail;” the spots of figures are placed on these needles and applied to the fabric by gum or other similar substance. The rail is then removed and the embroidery proceeded with.

[Printed, 1s. Drawing.]

A.D. 1859, June 24.—N^o 1519.

CLARK, WILLIAM.—(*A communication from James Snow Goodridge.*)—(*Provisional protection only.*)—This is an invention for a machine to perform the glove stitch. The sewing is accomplished by the agency of a barbed needle-hook, a rotating hook for drawing the thread, and a reciprocating “barb” for presenting the thread to the barbed needle-hook. The needle-hook is mounted horizontally on a travelling carriage which receives a backward and forward motion from an eccentric on the driving shaft. The materials to be sewn are held between notched pincers, such as are used by glove makers. These traverse across the machine and in front of the needle carriage, by means of a rack-work motion. They can also be opened to release the work, by means of a treadle under the machine. The hook for drawing

the thread through the fabric, after the loop has been made by the needle, is attached to the periphery of a wheel; and in front of the fabric is the barb for presenting the thread to the needle-hook. This receives motion, both vertical and horizontal, from suitable mechanism.

The stitch is formed in the following manner:—The barbed needle-hook passes through the material, seizes the thread, and then retires, drawing the loop with it. “This loop as long as the “needle pulls it in two straight parts, is held by the needle, but “from the time that this returns to the front, the thread being “released, obeys its natural elasticity, bends, and the loop is “made.” To render this result more certain, a piece of cloth is carried on the needle which, as the needle moves forward, comes in contact with the bend of the loop and presses it out. The rotating hook then seizes the loop and draws the thread through the materials, carrying it up with it and depositing it on a vertical plate covered with cloth, the nap of which retains the thread. Another plate also covered with cloth, then comes forward and moves the former forward, so that the thread may be removed by the barb which returns it into position for the needle. In performing this operation, the barb lays the thread over a small rod or pin which projects from the needle carriage, above the needle. The object of this pin is to form a loop of certain length between the point where the thread is attached to the cloth and the point where it is seized by the needle-hook; thus a sufficient length of thread is allowed for the back traverse of the needle carriage, without drawing the thread through the barb of the needle, which would fray it. When the rotating hook next seizes the loop some resistance will be afforded by the friction of the end of the thread between the two cloth-covered plates, thus the stitch is drawn tight.

[Printed, 8d. Drawing.]

A.D. 1859, July 1.—N° 1571.

CARTER, EDWARD WILSON.—(*Provisional protection only.*)—This invention relates to sewing machines in which a shuttle is employed. The first part consists in a mode of slackening the thread, so that a shuttle, larger than usual, may be employed. This is effected by passing the thread through a lever, “turned “*downwards by a positive motion*” obtained by connecting it

with the needle slide. A spring turns the lever back again so as to tighten the thread, and a stop is arranged to adjust the motion.

The shuttle is driven by a toothed wheel on the main shaft, which wheel "takes into a pinion upon another axis, which carries a crank by which the shuttle is caused to traverse." Another part of the invention "consists in a method of retarding the revolution of the shuttle bobbin." For this purpose a spring V, within the shuttle, is applied against the axis of the bobbin.

[Printed, 4*d.* No Drawings.]

A.D. 1859, July 4.—N° 1590.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Joseph Poole Pirsson.*)—An improved hemmer for sewing machines, which consists of two strips of metal twisted into a spiral form. The plates are parallel, and do not touch anywhere, except at the delivery end. By means of this hemmer the fair side of the stitch is made on the "right" side of the cloth, the reverse side receiving the needle.

[Printed, 8*d.* Drawings.]

A.D. 1859, July 13.—N° 1660. (* *)

COTTON, WILLIAM.—"Improvements in means or apparatus for connecting together or uniting looped fabrics."

The patentee sets forth these improvements as follows:—

"The object of the improvements is, when connecting together the edges of two or more looped fabrics, or the parts of such fabrics, or what is commonly called 'seaming,' 'pricking on,' or 'grafting' and 'turning off,' so to control the motions of the apparatus employed that the connecting thread may be conducted through the loops of the fabric in consecutive or such other order desired."

"In carrying out my improvements the points holding the work are set at distances apart corresponding with the rows or lines of loops, or the 'gauge' of the fabric, or in such manner that the uniting thread or threads may be conducted correctly through the desired loops. When adjoining loops across the fabrics are thus connected, the connecting thread may form a looping corresponding with that of which the fabric is composed. The times of the needle or thread carrier are adapted

“ to the step by step motion to the holding means, or vice versa ;
“ and the hook or instrument which takes into the thread as
“ passed through the loops of the fabric, to hold a loop thereof,
“ and place such loop on to the needle at its next time of entering,
“ I by preference form double, so as to embrace such needle, by
“ which I am enabled to traverse in either direction, but I do not
“ confine myself to so doing.”

[Printed, 1s. Drawings.]

A.D. 1859, July 22.—N° 1721.

NEWTON, WILLIAM EDWARD.—(*A communication from George Rugler, Boniface Plaz, and Jacob Rexroth.*)—(*Provisional protection only.*)—This relates more particularly to machines which make the back stitch as practised by hand. The needle is alternately seized between two pincers and passed backwards and forwards through the fabric. There are also arrangements for moving the fabric, “this movement being double-acting, or backwards and forwards.” There is, moreover, a contrivance for slackening that part of the thread which is to be fed to the needle. The needle is, by preference, elliptical ; it is pointed at both ends, has an eye in the middle, and is grooved on each side for the thread.

[Printed, 4d. No Drawings.]

A.D. 1859, August 2.—N° 1784.

FLETCHER, HENRY.—This is for improvements on the machine patented by W. F. Thomas, No. 1026, 1853, namely, “making two or more stitches each revolution of the driving wheel, instead of one, using a larger shuttle making a stitch each flight, a simpler feed motion, a better stand, and cheaper action.” The shuttle is shaped both ends alike, and has a tongue instead of a bobbin, to save space. The feeder has one vertical and one lateral motion communicated to it by means of “springs or elastics” instead of by cams ; “the other vertical and lateral motion are given by the needle slide or its mover.” “By having several arms with several needle slides and under-works moveable, the machine is made more useful.” “A broad looper with an eye in it produces the single or double thread chain-stitch.”

[Printed, 10d. Drawing.]

A.D. 1859, August 18.—N° 1899.

DRABBLE, JAMES.—(*Provisional protection only.*)—The employment of a “double-grooved cam roller” working two arms, one of which imparts a horizontal motion to the lower needle. This cam is so contrived that the machine can be worked by turning the driving wheel either way. “The upper lever arm is connected “to an upright bar, to the bottom of which is attached the “needle. To the lower part, and on one side of the bar, is fixed “a round arm, by means of which the saw-like part of the pres-“sure foot is lowered at the same time that the upright bar is “being raised. The bar being bent at its lower part, when raised “forces the stitch bar horizontally backwards, which it again “forces the bar connected with the pressure foot, drawing at the “same time the cloth along with it ready for another stitch.” “The lower lever arm is connected to a bar, to which is attached “the needle. The bar, being uneven, gives to the needle a “slightly curved motion in passing round the hole through “which the upper needle passes.”

[Printed, 4*d.* No Drawings.]

A.D. 1859, August 24.—N° 1938.

JUDKINS, CHARLES TIOT.—This invention consists “in dis-“pensing with a shuttle for carrying the under thread,” and, instead, making use of “a covered reel or stationary bobbin con-“taining the reel on which the thread is wound; the slack is “taken up by means of a lever worked by a cam or other con-“venient known means, and by these arrangements a knot stitch “is formed shewing the thread on both sides of the work alike.”

[Printed, 1*s. 2d.* Drawings.]

A.D. 1859, August 29.—N° 1963.

CLARK, WILLIAM.—(*A communication from Kasimir Vogel.*)—“This invention consists in certain modes of interlacing three “or more threads in cloth or other material, and with each other, “for the production of stitches of a novel character to be used for “making seams, working button-holes, embroidering, &c.” Also in “certain novel modes of applying and combining in a sewing “machine a system of needles and other devices operating in “combination therewith for the production of such stitches; also

“ in fitting the bed plate or work plate of a sewing machine with
“ an adjustable needle plate containing two or more differently-
“ sized or differently-shaped, or differently-arranged needle holes,
“ either one of which may, by a proper adjustment of the plate,
“ be brought to a position for the needle or needles to work
“ through, according to size, form, or arrangement of the needle
“ or needles.”

[Printed, 1s. Drawings.]

A.D. 1859, August 29.—N° 1966. (* *)

BAUGH, BENJAMIN.—“ Certain improved machinery or me-
“ chanical arrangements for raising or giving form to articles
“ formed of sheet metal, such as knobs, thimbles, ferules,”
“ button shells, and other such like small articles.”

The articles mentioned are produced, a number at a time, by means of “ an annular pressing plate,” described in Hetherington’s Specification, No. 14,251, which presses “ the edge or peri-
“ phery of the disc intended to be formed during the time the
“ desired shape is being imparted to it,” so that “ all puckering
“ of the metal shell ” is avoided.

The patentee says,—“ In giving effect to my improvements, in combination with the pressure plate, I purpose in some instances
“ for it to perform the double operation, namely, of cutting out
“ the disc as well as holding it down during the descent of a
“ concentric forming tool (the end of which, being of the shape
“ intended to be imparted to the disc,) descends and presses it
“ into form, in doing which the article formed will be pressed
“ through a hole to be knocked off below the bed as the forming
“ tool rises for the next operation.” “ And for the production of
“ articles wherein it may not be desirable to cut out and form at
“ one operation, I introduce the blanks to the forming tool by
“ placing them in a vertical tube held above the bed, the exact
“ thickness of a blank, and by using a steel blade of the same
“ thickness, brought into action by the motion of the press,
“ a blank is forced out and carried to a sunken cavity for the
“ pressure ring to descend on it before the concentric forming tool
“ descends to put it into shape; but instead of using a blade of
“ steel to carry the blanks from the feed tube or tubes, the bed
“ may be made to revolve or reciprocate, taking care to sink
“ cavities in that part of the bed that passes under the feed tube

“ or tubes, such cavities being of the exact depth of the thickness
“ of the blank.”

[Printed, 2s. Drawings.]

A.D. 1859, September 5.—N° 2028.

NEWTON, ALFRED VINCENT.—(*A communication from Henry Washington Hayden.*)—This is for a machine to form the lock stitch by means of an upper needle, a looper, and a bobbin carrying the under thread. The inventor claims:—Firstly, “the attachment of the looping hook to a revolving arm which has a vibrating motion in a direction transversely to its revolution, for the purpose of operating in combination with the locking thread bobbin.” Secondly, the means described “for operating the revolving arm and looping work, and for carrying the locking thread bobbin, so that the loops may be passed over it to receive the locking thread.” Thirdly, “an adjustable pin” standing across a space behind the lower part of the cam “that guides the rotating looper, which is intended to prevent any slackening of the loop. Fourthly, “feeding the cloth or material to be sewn by means of one or more smooth-faced angular projections on the feed bar or its equivalent, in combination with one or more ratchet-like wheels attached to the presser, such wheels being arranged with the lowest portions of their peripheries, above the bottom of the presser foot, and the projections pressing the material into one notch at a time of each wheel.”

[Printed, 8d. Drawing.]

A.D. 1859, September 23.—N° 2160.

PARRY, CHARLES JAMES.—The inventor describes his invention as follows:—“ I form a banding or binding of cloth or other material, by causing it to enter a flattened tube exactly its own width, the edges of which tube are turned inwards at the end where the cloth is delivered, so as to double the cloth, and also to turn in the edges, thus forming a binding or banding which covers the edges of the cloth or material in the usual manner.”

[Printed, 6d. Drawing.]

A.D. 1859, October 12.—N° 2331. (* *)

TWELLS, THOMAS.—“ Improvements in machinery and apparatus connected therewith for embroidering or ornamenting woven, looped, or lace fabrics.”

The patentee defines these improvements as follows :—

“ The first part of my invention consists in the introduction of
“ a grooved needle, with one, two, or more eyes, fixed in a spindle
“ or needle carriage, having a rectilinear motion through the
“ fabric. When the needle is elevated or passed through the
“ fabric, a bobbin and carriage passing through the thread within
“ the needle groove, from the backward to the forward motion,
“ will then move laterally in a comb bar fixed to receive the
“ carriage, and will be passed to the backward motion; the
“ comb bar then moving laterally will move the carriage round
“ the thread, so that it places one or more laps or twists round
“ the thread passing through the grooved needle which has a
“ rectilinear motion.”

“ In explaining the second part of my invention, I have to
“ state that I move the material from right to left, and also from
“ back to front, as follows :—The grooved needle, when the work
“ is moving to the right-hand, stands with the groove to the left-
“ hand, and when the work is moving to the left-hand the groove
“ stands to the right-hand; hence, if the work be moving back-
“ ward and to the right, or to the front and to the right, the
“ needle will not require to change its position. In moving the
“ material to the left-hand the same or similar operations will be
“ effected to the right-hand.”

“ For the third part of my invention I use the ordinary barb
“ needle, fixed in the stem or lead, in contradistinction to one
“ revolving. The barb needle passes through the fabric, receives
“ its thread from the guide or thread layer, and, in receding, the
“ barb is pressed down by a presser moving in a lateral direction.
“ When withdrawn from the work, an instrument having an
“ excentric motion descends and holds the loop on the needle
“ stem until the needle has pierced the fabric in its forward
“ motion; the instrument is then withdrawn, and allowed to
“ remain in its then position until the needle is withdrawn to
“ form a second loop.”

[Printed, 3s. 6d. Drawings.]

A.D. 1859, October 17.—N° 2374.

TILLIE, WILLIAM.—This invention relates to two improvements, viz., a contrivance for stopping a machine on the thread breaking, and a “ clamping guide” for the fabric.

To carry out the first part of the invention, the thread, instead

of being led directly from the bobbin to the needle, is carried back through an eye on a steeple fixed to the framing, thence through a trumpet and over a lever to the needle. This lever when pressed down by the tension of the thread secures a little carriage, which runs in a guide on the framing, in its place. The carriage has two pins projecting from it, and between them the driving band works. If the thread breaks, the lever flies up, and the carriage is released; the latter, being all the time under the strain of a spring, moves away, and draws the band from the driving to a loose pulley. The "clamping guide" consists of a plate of metal screwed or hinged to the table. Upon this plate there is another adjusted by two screws. One screw, working in a longitudinal slot, fixes the distance the stitch is to be from the edge, and the other regulates the space to be left between the two plates, according to the thickness of the material.

[Printed, 10*d.* Drawing.]

A.D. 1859, October 20.—N° 2403.

NIVELLE, FRANÇOIS.—The arrangement of sewing machines with a needle and a hook which passes alternately to the right and to the left of the needle.

The application of the above principle to machines working also with shuttles. "For the purpose of forming a tight knot, the "shuttle alternately passes in front of and behind the needle." A stitch regulator, "consisting of an octagon, the eight faces of "which present different angles to the centre progressively; this "regulator is fixed to the lower part of the needle carrier, so that "the stop of the work presser abuts against one of its faces, and "according as that face is more or less wide of the centre, a stitch "of greater or less length is produced."

The patentee also claims the application of the parts he describes to all kinds of sewing machines.

[Printed, 10*d.* Drawings.]

A.D. 1859, November 7.—N° 2536.

TEMPLETON, ARCHIBALD, and LAWSON, JOHN.—"Manu-
"facture of chenille." Instead of making chenille as hereto-
fore, "the yarns of worsted or other fibres are laid side by side,
"so as to form a sheet of unconnected yarns laid parallel to
"each other, and the several yarns so laid together in a sheet are

" then combined or connected together by making parallel rows
" of stitches, produced by a sewing machine having several needles,
" in such manner as to produce the rows of parallel stitches
" simultaneously and transversely or at right angles to the
" direction in which the yarns are laid, and such stitches may
" consist either of tambour work, or they may be made by sewing
" machines where two threads are used to each needle, one at the
" back and the other at the front of the yarns In
" some cases a yarn or thread is introduced between the two rows
" of stitches at or near the middle of each strip, in such manner
" that such yarn is fastened to the fabric, and this is preferably
" done by the use of one back thread or yarn to the two threads,
" by which the two rows of stitches of a strip are produced."

[Printed, 10d. Drawing.]

A.D. 1859, December 29.—N° 2976.

JOHNSON, JOHN HENRY.—(*A communication from James Snow Goodridge.*)—(*Provisional protection only.*)—An arrangement of mechanism for producing an "over-cast stitch similar to that used in sewing kid gloves," the threads being in lengths instead of being supplied from a bobbin.

The fabric is held between jaws, and fed automatically in front of a hook, "similar to an ordinary crotchet hook." This hook, having been pushed through the fabric, seizes the thread, which is held for that purpose on the opposite side of the fabric, and draws it through the material. A revolving hook then catches the loop, and draws it out or until the loose end of the thread is entirely pulled through the fabric. Whilst this is being done, the hook is again passed through the material, and is ready to receive the thread for the next stitch.

[Printed, 4d. No Drawings.]

A.D. 1859, December 31.—N° 2998.

JACKSON, WILLIAM.—This is for a machine to form the lock stitch in the following manner:—The thread is carried down through the fabric by the upper needle in the usual way. The loop is then caught by a hook attached to or formed at the end of the main revolving shaft, which carries it round a reel placed vertically against the end of the shaft. "The upper tension is

" so arranged as to prevent an increasing strain on the thread
" whilst the hook is operating on the thread."

[Printed, 10d. Drawing.]

1860.

A.D. 1860, January 5.—Nº 35.

- PROCTER, THOMAS, and WALKER, THOMAS.—(*Provisional protection only.*)—“ Improvements in sewing machines,” namely,
- (1.) “ in so arranging the shuttle that the thread may have an equal tension without being put through perforated holes by means of a bobbin with conical ends, acted upon by a spring and screw, or either of them ; likewise an improved guide bar for the thread to pass over as it leaves the bobbin fixed in the centre of the shuttle face next the needle.”
 - (2.) “ An improved feed motion, by which the fabric or material to be sewn is brought forward by two wheels without centres rotating on a steel or other metal guide, with small pinion working in the cogs of the feed wheels made to rotate by means of a ratchet wheel acted upon by a vibrating bar, and connecting rod and pall worked by a tappet wheel supported by a bracket or set screw.”
 - (3.) “ An improved needle carrier working in grooved guides adjusted by set screws and connecting rod from needle holder to the beam.”
 - (4.) “ The employment of circular or straight double conical pins adjusted by lock nuts, whereby the machine will keep its true lines, applicable to all machines with pivoted centres.”
 - (5.) “ The employment of a centre throw crank to give motion to all the machine; also of a connecting rod with conical pin to impart the mode of working the beam ; and also of a connecting rod attached to the lower end of the beam connecting rod to give motion to the bell crank.”
 - (6.) “ The employment of a bell crank pivoted to the machine with conical pins, to give motion to the shuttle thrower and needle holder for the horizontal needle to form the Lancashire stitch.”

(7.) "Arranging the shuttle so as to work through the feed motion longitudinally with the machine, and in so constructing the machines that the feed and shuttle work in a round pipe or arm attached to the frame on which the material is to be sewn."

(8.) "The employment of a small rotating roller pivotted on a perpendicular slide to act as a pressure on the cloth."

(9.) "The employment of a catch wheel" on the crank shaft to stop or start the machine.

(10.) "The employment of a beam moved by a connecting rod from the centre throw crank, the needle carrier being connected by a connecting rod from the beam."

[Printed, &c. No Drawings.]

A.D. 1860, January 10.—N° 65.

DICKSON, JOHN FARMERLEY.—(*Provisional protection only.*)—Improvements in sewing machines.

(1.) A machine in which the lock stitch or Lancashire stitch may be made at will, by simply removing the shuttle and part of the driver when the latter stitch is to be made, and substituting a straight needle to carry the under thread.

(2.) Constructing the shuttle in two parts "pointed in the direction of its length, and fastened by a spring clasp." Also, "confining the bobbins of the shuttle by a wire extending longitudinally along the front of the shuttle on that side nearest the vertical needle."

(3.) "Making the pins and bearings of sewing machines conical instead of cylindrical, the pins being fitted with a screw and nut." Thus they are more durable, and are capable of adjustment.

(4.) Making the lock stitch "with a stationary shuttle placed beneath the bed of the machine, and confined in a suitable shuttle holder by a spring; the shuttle holder is mounted on a shaft" oscillated by a cam on the main shaft.

(5.) The shuttle for the machine constructed as in (4). The thread is wound on a bobbin "having only one flange, such flange forming the cap or cover to the said shuttle."

(6.) The use of pads of india-rubber between the ends of the shuttle and its driver for the purpose of deadening sound.

(7.) Effecting the feed motion "by a single stud placed upon the vertical needle carrier."

(8.) Doubling braid or binding by passing it round "a wheel capable of adjustment to any width, and through a series of guides, and finally delivering the braid at right angles to the direction of the seam."

[Printed, 4d. No Drawings.]

A.D. 1860, February 2.—N° 275.

CHATWOOD, SAMUEL.—This improvement consists in the construction of a machine which shall produce two stitches to each reciprocation of the shuttle. The needle is worked up and down twice during a single revolution of the cam on the driving shaft. The shuttle is so actuated that it makes one stitch by its forward motion, and another by its return. Thus the needle descends through the cloth twice during a single reciprocation of the shuttle.

[Printed, 10d. Drawing.]

A.D. 1860, February 3.—N° 283.

HALL, JOHN.—(*Provisional protection only.*)—The inventor's description of this improvement is as follows:—"I obtain the necessary motions for the feed needle and shuttle from a cam or eccentric fixed to the under part of the machine. I connect one end of a rod to the said cam or eccentric, and the other end to a plate under the feeder and vertical needle; the motion thus communicated gives the necessary horizontal movement to the feeder and shuttle. The vertical motion of the needle and needle-holder is also obtained by a roller working in a groove on the said cam or eccentric communicating motion to a lever or arm outside the machine extending to the needle-holder, the motion thus given constituting the vertical movement of the needle and holder."

[Printed, 4d. No Drawings.]

A.D. 1860, February 7.—N° 319.

WILSON, WILLIAM NEWTON.—(*Partly a communication from Lucius Bijelur.*)—(*Provisional protection only.*)—This comprises the following:—

(1.) A lever working a moveable hook which takes the loop of the under thread and spreads it until the upper needle enters it. The loop then slips off the hook.

(2.) "Arranging the parts of a single thread machine, so as to
"operate the parts by direct rotary motion, the under instrument
"for spreading and securing the loop being" a rotating hook,
"nearly circular in form, but pointed at one end and split or
"divided at the other."

(3.) The employment, in a single thread machine, of two hooks
acting together. "The longest enters the loop formed by the
"needle, and in its motion slips it upon the shorter hook, which
"opens it" for the passage of the needle.

(4.) A hemmer, consisting of "two curved pieces of metal, the
"one fixed for the width required, and the other operated by a
"spring so as to fold the hem."

(5.) An adjustable guide, consisting of two suitably shaped
pieces of metal joined at one end and "with a sliding piece work-
ing between and adjusted by screws for regulating the width of
"the tuck, and the pressure on the cloth."

[Printed, 4d. No Drawings.]

A.D. 1860, February 8.—N° 337.

PIDDING, WILLIAM.—(*Provisional protection only.*)—This invention has for its object to facilitate the threading of needles by making an opening at the end or side of the eye, the opening acting as a spring by pressure of the thread in the operation of threading, so that it is closed when the thread has passed into the eye.

[Printed, 4d. No Drawings.]

A.D. 1860, February 8.—N° 338.

WHIGHT, GEORGE.—(*A communication from Theodore S. Washburn.*)—A machine for producing a two-thread or lock stitch. A shaft, carried by the framing, is provided at one end with a spur wheel and at the other with "a crescent cam operating in con-
junction with a spring on a looper, in such a manner as to give
"an alternate lateral and reciprocating motion to the same." The under thread "is passed through two eyes in the end of the
"looper," which resembles a crank, "and works on a pin in
"front of the bed plate." The vertical needle and the feeder have motion communicated to them by a cam. "The length of the
"stitch is regulated by means of a thumbscrew on the side of the
"rocking frame" in connection with the feed plate. "The

“ reverse turning of the machine is prevented by a projection on
“ the crescent cam locking into a notch in front of the looper.”

[Printed, 10d. Drawing.]

A.D. 1860, February 11.—N° 374.

JOHNSON, JOHN HENRY.—(*A communication from Samuel Comfort and Francis H. Jackson.*)—(*Provisional protection only.*)

—In this machine a curved needle and holder are employed. The needle is prevented from springing “by working in a guide slot in the under side of the fixed arm or bracket,” the tension of the thread assisting to carry out this object. “A guide eye and oblong slot situated between the base on which the fabric rests and the shuttle serve to prevent the latter from breaking the needle as it traverses the shuttle race, whilst at the same time the oblong slot communicating with this guide eye accommodates the needle thread as the shuttle passes through the loop.”

“ The shuttle consists of an outer casing and a spool composed of two discs connected centrally and arranged parallel to the shuttle race, the whole forming a complete envelope for the thread.” An arrangement is also described for preventing the shuttle from turning in its race. Tension regulators for both threads are also provided, and any irregularity in the winding of the shuttle thread is compensated for by its tension spring.

[Printed, 4d. No Drawings.]

A.D. 1860, February 13.—N° 391.

MARSH, JOHN.—This comprises the following improvements:—

(1.) In the needle, which has a flat eye in the upper part communicating direct with the ordinary groove or channel in the needle.” By this means the liability to cutting is reduced.

(2.) The shuttle. This is double-ended with a circular bobbin. It is fitted with a spring roller to apply tension to the thread. Small rollers are also added to conduct the thread from the bobbin with less friction. This shuttle makes a stitch in moving backward as well as forward.

(3.) The shuttle driver is placed at the opposite side “to that at which the loop of the work is situated.” It is moved by a cam on the driving spindle or axis.

(4.) A "skeleton" feeding foot, which presses on each side of the part which is being sewn.

(5.) The tension regulator for the needle thread.—"A weighted "lever with a roller at one end" presses on the thread, the weight being capable of adjustment. A number of horizontal wires are also attached to the framing by one of the ends of each; "the "other ends are free to pass the sewing material over and under, so as to increase or decrease the tension.

(6.) An arrangement for waxing the sewing material.

[Printed, 1s. 6d. Drawings.]

A.D. 1860, February 24.—Nº 506.

WARD, SETH.—This invention relates to machines which sew with a lock stitch, and relates to an arrangement for effecting the necessary tension of the two threads and also to an improvement in the feed motion. The lower thread is carried on a spool contained within an eccentric shuttle case arranged horizontally under the table. This case is driven by a pinion and a circular rack in the centre of the case. It has also "an inclined or "tapered nose" for the purpose of seizing the needle thread and opening the loop for the passage of the lower thread. This passes through a hole in the lid of the shuttle case, and the tension is effected by means of a small plate, which is caused to rise at the required moment and press the thread against the table above it. This pressing plate is capable of adjustment. The needle thread is passed through an eye in the head of a screw, and then twisted round the thread of the screw two or three turns. A small weighted lever rests on the side of the bobbin and a spring is added to take up the slack.

The feed is done by a roughened plate "fitted to the lower end "of a vertical feed bar which works both horizontally and ver- "tically." The horizontal motion is derived from an incline on the needle slide, and the vertical motion is imparted by means of a lever and tumbler on the needle lever. A second incline on the front of the needle slide acting on the lever returns the feeder.

[Printed, 10d. Drawing.]

A.D. 1860, March 5.—Nº 600.

JOHNSON, JOHN HENRY.—(*A communication from George B. Arnold and Abbey H. Price.*)—This relates to a machine for

gathering and making ruffles. In making certain garments, &c. it is, very frequently, necessary to gather into many folds one piece of cloth and join it to another piece not so gathered. This machine is intended to perform such work.

The piece of fabric to be gathered and the piece to which it is to be joined are separated by a plate of metal and placed on the table of the machine, the former undermost. This plate or "separator" only extends to the needle, so that the two pieces of cloth are only kept apart until the stitch is about to be made. Underneath, and working through slots in the table, are two feeders, one on one side of the needle and one on the other. These act on the under cloth or the one to be gathered, but they do not work simultaneously. The mode of operation is this:—the first feeder moves the under cloth, and, because the second one is at this time inert, a corrugation is formed. The needle then descends through the upper cloth and this corrugation and joins them together. Then the second feeder comes into action, and assisted by the ordinary presser above the table moves on the work.

[Printed, 8d. Drawing.]

A.D. 1860, March 5.—N° 601.

WILSON, WILLIAM NEWTON, and PITTS, JAMES.—An improved binder for use with sewing machines. The inventors describe it as follows:—"To a piece of metal, curled at one point, " somewhat in the form of the letter S reversed, we attach by " two screws a double clip, one end of which rests firmly on the " upper part of the curl, and the other enters a small slot in the " bottom of the curl, thereby fixing absolutely the position of " the binding. Where the binding is to be laid on more on one " side than the other, the clip is made in two separate parts, both " being adjusted by the screw by which they are connected with " the fixed plate, which in its turn is screwed to the machine." The binding is led through guides to the machine and a suitable tension is applied to it.

[Printed, 6d. Drawing.]

A.D. 1860, March 21.—N° 734.

COPENCE, WILLIAM.—(*A communication from James Willcox.*)—
A sewing machine operates with a single thread, and has

" combined with it an intermittent feed, by means of which the " cloth is moved forward only at each alternate stroke of the " needle." The feed may, however, be made to operate at each stroke, by covering a portion of its cam. "The looper has a " stationary shield to keep the thread from being misplaced in " the formation of the stitch." There is also combined with it " a vibratory shield for the purpose of assisting in preventing " the misplacement of the thread in the formation of the stitch, " also a lifter for lifting the loop and thus facilitating the drawing " of the loop." There is also a stop combined with the looper, by means of which the loop is turned and so forms a peculiar stitch. There is also a hemmer by means of which a felled seam may be made. An intermittent tension confines the delivery of the thread to certain strokes of the needle. "The thread in " its delivery is confined between two glass discs, and passes " round the stud on which these discs are secured." The needle and its seat are arranged so as "to insure the turning of the eye " into the required direction."

[Printed, 1s. Drawings.]

A.D. 1860, March 22.—N° 747.

MILLARD, DAVID.—(*A communication from James Rowe.*)—In this machine the feed motion is effected by means of an arm pivotted on, and parallel with the needle arm. The upper end of this arm works the presser foot, and the lower end passes down through a slot in the table to the crank on the driving shaft. From this point a lever extends horizontally under the table and communicates a back and fro motion to a horizontal feeding bar working in a line at right angles to the latter mentioned lever. This feeding bar is made of thin metal and is roughened at one end where it touches the cloth. Its springy nature causes its normal position to be from the cloth and under the table. When the looper advances, a shoe at the end of the looper bar engages with the end of the feeding bar and raises it to work the cloth.

The looper is in the form of a needle, with two eyes near its point, the space between them being curved, so as to allow the vertical needle to pass between the thread and the looper. The looper also passes in a like manner through the loop made by the vertical needle and thereby locks the stitches as they are made by the vertical needle.

[Printed, 10d. Drawing.]

A.D. 1860, March 27.—N° 794.

MILLARD, DAVID.—(*A communication from W. E. Braman.*)—The first part of this invention refers to the use of friction pulleys for communicating motion to sewing machines.

The top of the needle bar is notched vertically, and projecting laterally into this notch there is a loose pin, retained in position by a flat adjustable spring. The needle thread passes through this notch; and “the pin is intended to nip the thread at certain “points of the sewing operation and thus prevent all undue “slackness.”

To work the feeder “a pin on the vertical needle rock lever “works in a slot hole in a sliding bar under the table” and communicates a reciprocating motion, which in turn is communicated to “a peculiarly shaped sliding plate. A recess is formed in the “edge of the bar to receive and embrace a portion of the plate, “and they are so arranged that the bar may move independently “of the plate for a short distance and then operate on the plate. “The plate is formed with an incline, against which a stud on “the under side of the feeder bears by reason of a spring, giving “the feeder a tendency to move backwards.” A stop limits this movement and the amount of stitch. “When the sliding plate “is thrust forward, its incline will press the feeder forward, and “on its recession the feeder will return to its former position. “Before however this takes place, the forward end of the sliding “bar will by bringing an incline on its edge to act upon the “feeder, project it through a slot in the table, and cause it to “bear against the work which lies over the slot; the sliding plate “will then move forward, and carry over the feeder and with it “the work.”

“Simultaneously with the movement of the feeder” a finger takes the loop formed by the looper and holds it for the vertical needle. Then the sliding plate retires, the vertical needle rises, and the looper comes forward and enters the loop of the stitching thread.

[Printed, 10d. Drawing.]

A.D. 1860, April 11.—N° 904.

TURNER, THOMAS ALLEN.—An improvement in the means of remedying the want of firmness in sewing boots and shoes, and the liability of the sewing to become loose when one stitch is defective

or injured. The inventor inserts between the parts to be joined “ a strip of linen, or other fabric, impregnated with a resinous or “ waxy composition. The thread in passing through the said “ fabric becomes more or less coated with the wax or resin, and “ the sewing acquires great solidity or firmness.”

[Printed, 4d. No Drawings.]

A.D. 1860, April 11.—Nº 911.

WESTMORELAND, EDWIN, and WESTMORELAND, WILLIAM.—This invention embraces both “ the double lock knot “ stitch and the double traverse motion ; the stitches are formed “ by the combined action of a needle and shuttle, which shuttle “ constantly revolves in a circular groove ; by reversing the “ shuttle motion it will make the double lock stitch or a peculiar “ fast knot stitch.”

[Printed, 1s. 10d. Drawings.]

A.D. 1860, April 14.—Nº 932.

HUGHES, EDWARD JOSEPH.—(*A communication from James Wilcox and Edward Howard.*)—This invention relates to a series of improvements applicable to sewing machines, as the following :—

(1.) “ A self-acting brake for instantly preventing the movement “ in the wrong direction of the fly wheel of the treddle.” This brake also serves as a dress guard to the wheel. It consists in opposing a surface tangentially to the wheel and placing in the angle formed by the surface and the periphery a cylinder or ball. The wheel is thus free to revolve in one direction, but when it is attempted to turn it the opposite way the cylinder is gripped between it and the tangential surface, and so holds the wheel. This only applies to sewing machines.

(2.) A method of passing the thread between two spring surfaces to give it tension.

(3.) A method of fixing the needle in its holder.

“ The aperture into which the needle is to be put has a tongue, “ and the needle a slot corresponding, the tapered end of the bar “ being divided, so that by the operation of the screw it is com- “ pressed ” and so holds the needle.

(4.) Improved hemmers of various patterns attached to the presser foot.

(5.) A "cylinder feed" motion. The fabric passes between two wheels, which grip it between them. "The material does not come under the pressure of the feed until after the sewing is effected, but a foot is placed immediately above the material sewn without being in actual contact with it, but sufficiently near to strip the material" off the needle.

[Printed, 8s. 4d. Drawings.]

A.D. 1860, April 14.—N° 934.

NOTMAN, JOHN.—(*A communication from James Clough Cropper.*)—A machine for use with a single thread in making the ordinary loop stitch. An under thread may be added, and by a method of threading the looping hook a locked stitch may be produced. There is also an apparatus for taking up the slack thread when the needle is withdrawn from the material.

[Printed, 8d. Drawing.]

A.D. 1860, May 15.—N° 1192.

SMITHARD, SAMUEL, and WHEATCROFT, HENRY.—(*Provisional protection only.*)—"Improvements in the construction of machines for uniting portions of lace blond, edging, nett, and other fabrics, usually called 'running-on machines.' " This invention relates, firstly, to the mode of actuating the needle. The "undulatory" motion of the needle is obtained by means of a rocking shaft instead of the rollers usually employed. "By means of gear from the axle of the receiving cylinder of the machine" the inventors drive "a crank axle and crank rod, or an excentric or cam, which in turn actuates a rocking shaft, on which is mounted a pair of rollers, having a vertical groove in them; in this groove the end of the needle plays, and passes between a small pair of steadyng rolls in front of the others, and also mounted on the working shaft."

Secondly, to apparatus for indicating when a certain length of fabric has passed through the machine. By means of screw and wheel gear, motion from the axis of the receiving cylinder is transmitted to an indicator, and as a revolution of the receiving cylinder indicates or measures a definite amount of fabric passed over, this amount can be measured by the indicator.

Thirdly, to the use of clock-work for driving the "reel or spool, which receives the fabrics after they have passed through the machine and are united."

[Printed, 4d. No Drawings.]

A.D. 1860, May 28.—N° 1313.

JOHNSON, JOHN HENRY.—(*A communication from George B. Arnold and Alfred Arnold.*)—“Improvements in ruffles.” “The general arrangement of the mechanism for producing the gathered work bears some resemblance to that for which Letters Patent were issued to me on the Fifth day of March (1860) (No. 600), differing mainly in these respects, that a single roughened plate is employed as a feeder and gatherer; the plate called a separator is made adjustable, and the presser foot is provided with an inclined projection on its under side, which projection serves to hold the cloth whilst a gather or fold is being formed. The length of stitch and the fulness of gather are regulated by suitably adjusting the relative positions of the separator, the presser foot, and the feeding surface.”

[Printed, 10d. Drawing.]

A.D. 1860, May 29.—N° 1327. (* *)

HUGHES, HESKETH.—“Improvements in machinery forゴフ fering, fluting, shaping, embossing, and connecting together lace, ribbons, and other like materials, parts of which improvements are also applicable to the shaping and corrugating of metals.”

The object of the third part of this invention is to connect or run together two pieces of lace, blond, or other material, and for this purpose a set of leaves are employed, which have an up-and-down motion imparted to them by the guides at the side of the machine, similar to those before described in combination with a fixed wave-shaped needle made to correspond with the motion imparted to the leaves by the guides. This needle carries a thread so that as the machine works the materials follow the shape of the needle and the thread is run through them.

The other parts of the invention relate to subjects which do not require notice in the present series of abridgments.

[Printed, 1s. 4d. Drawings.]

A.D. 1860, June 8.—N° 1417.

NEWTON, WILLIAM EDWARD.—(*A communication from Albert Gould Allen.*)—This invention consists in working the sewing machine by steam power. “The reciprocating vertical needle is attached to the lower end of the piston rod so as to admit of

" the machine being driven by compressed air," or other elastic fluid. The material is fed by means of " a rotating disc or wheel." It also consists in " providing an obliquely arranged recess in the " side of the shuttle raceway next the needle, for the reception " of one side of the loop of the needle thread, and the protection " of the loop from the shuttle," so as to guard it from chafing and cutting.

It further consists in winding the thread on the bobbins by means of a turbine driven by the compressed air, or other fluid, used as the motive agent of the machine.

[Printed, 10*d.* Drawing.]

A.D. 1860, June 28.—N^o 1569.

CAMPION, WILLIAM, and CAMPION, WILLIAM.—(*Letters Patent void for want of Final Specification.*)—This invention relates to the arrangement of various parts of a sewing machine with a view to economy of production. The machine has a hollow bed plate with " a tab cast across and underneath near the needle bar end." The plate carries a standard, at one end of which is " a spindle " bar and presser foot." The needle bar is moved " by a pin " placed eccentrically in a cam on one end of a horizontal shaft " carried by the standard." This pin also lifts a lever secured to the presser bar, which is also moved horizontally in a similar manner. There is also a cam at the opposite end of the horizontal shaft, which communicates motion to a rocking shaft, which, in its turn, works the looping hook. This rocking shaft is also moved to the right or left by the driving wheel. Instead of using the cam, the rocking lever may be worked by a short lever attached to it, the end of which works in " a groove cut on " the circumference of the driving wheel." The inventors also make use of a shuttle driven by a bolt, which works in the driving wheel in a similar manner. The shuttle consists of a bobbin having one end flat and the other rounded ; " the flat side lies up " on a flat piece of metal rounded at one end, and is of the same " size as the bobbin, and the other end projecting the distance of " half the circumference beyond the bobbin, at which distance it " terminates; the part which projects turns over from the point, " each side being bent over a portion of the round end of the " bobbin, the bobbin being kept in position on the round end of " the plate by a light spring, in which is rivetted a pin, which " passes into a hole in the centre of the bobbin, the opposite end

" of the spring being soldered into the pointed end of the
" shuttle."

[Printed, &d. No Drawings.]

A.D. 1860, July 2.—N° 1593.

BISHOP, HORBERT HENRY.—The inventor claims the three following improvements, namely—

(1.) "Moving the cloth along by a sideways motion given to
" the needle while terminating its downward stroke, the
" needle returning each stitch to its former position."

(2.) "A spring foot for holding the goods down to the bed." The bar carrying this foot has a row of holes in it; by introducing the end of a spring into one of them the pressure may be regulated.

(3.) "An adjustable looper, having a spring at the side thereof,
" and eyes for the second thread from a spool below the machine
" bed. The looper passes through the loop of needle thread, the
" needle draws up and comes down between the looper and the
" spring, these draw back, drop the previous loop of the needle
" thread around the loop of second thread, and then take a new
" loop of needle thread, and so on."

[Printed, &d. Drawing.]

A.D. 1860, July 4.—N° 1620.

SAVAGE, JOHN.—Apparatus for threading needles. It consists of two plates pressed together by set screws, each plate having a groove cut in its face for the needle to lie in. When the plates are screwed with their faces together, the grooves form a sheath for the needle. Nearly at the end of the grooves, or sheath, and at right angles to it, is drilled a hole. One end of this hole is countersunk to guide the thread. When the needle is placed in the grooves or sheath the eye appears between the holes in the two plates. Thus when the thread is passed into the countersunk hole to the hole in the other plate it cannot fail to pass through the eye of the needle.

[Printed, &d. Drawing.]

A.D. 1860, July 5.—N° 1631.

THOMAS, WILLIAM FREDERICK.—In this invention "the
" back of the shuttle race of a sewing machine and the back of

" the shuttle are each made inclined, and the shuttle is of such a width that the inclined side of the shuttle rests on the inclined side of the race, a space being left between the bottom of the shuttle and the bottom of the race; by this means as the shuttle and the race wear away the shuttle will continue to work in the same vertical plane." "The upper presser is mounted on a lever, the ends of the two arms of which are both on the same side of the axis on which the lever turns; one of the arms of the lever carries the presser," and the other is worked by a cam so as to lift the presser at intervals. The presser may be serrated, but it is preferred to move the fabric by a notched plate working under it. The needle is bent.

[Printed 1s. Drawings.]

A.D. 1860, July 13.—N° 1690.

JUDKINS, CHARLES TIOT.—(*Partly a communication from Joseph Wetherby Bartlett.*)—(*Provisional protection only.*)—The first part of this invention consists in forming a loop stitch by means of a single needle, and without the aid of a looper. The needle is so contrived as to loop its own stitch and feed the material.

The second part consists in "having grooves in the feeding surfaces" of sewing machines, "so that cords with coverings thereon, . . . and also other articles of cylindrical form, may be sewn as they are pressed between such grooved surfaces."

[Printed, 4d. No Drawings.]

A.D. 1860, July 14.—N° 1710.

HOPE, LEWIS.—"This improvement relates to double-threaded sewing machines in which a 'knot-stitch' is produced."

"The thread from the upper bobbin passes through the eye of the needle, and is carried upwards and downwards through the fabric, receiving after each downward movement a twist or revolution round the lower spool, by means of a hook attached to the vertical spindle, on which the lower spool rotates freely. The twist is tightened where the thread from the lower spool comes through the fabric and there forms the knot." The inventor claims (1) the method of communicating reciprocating rotary motion to the hook by means of the principle known in mechanics as a "link-motion;" (2) producing tension of the

lower thread "by passing it through an aperture and a lug in the loose upper casing of the lower spool;" (3) "making the lower spool with a loose centre," thus enabling it to be conveniently wound with thread; (4) "the method of pulling up the spare thread of the upper bobbin" by a spring attached to the needle lever, combined with a thread lever.

[Printed, 8d. Drawing.]

A.D. 1860, July 20.—N° 1761.

KENNY, JOHN.—(*Provisional protection only.*)—The improvement consists, first, in so arranging and contriving the parts of a sewing machine "that the stitch formed may be either the plain interlocked stitch, or it may be varied to that known as the tied stitch, by simply varying the delivery of the shuttle thread." "A vertical stationary circular shuttle box" is employed containing a discoidal shuttle, and when the shuttle thread is "delivered from the axis" the "tied stitch" is made. When "the ordinary lock stitch only is required, it is necessary to deliver the thread from the periphery."

Another part of the invention consists "in arranging sewing machines in such manner that the direction of the movement of the work or material when required to be at right angles to the previous action may be changed by moving the handle of a lever in the direction in which it is required the work to travel."

[Printed, 4d. No Drawings.]

A.D. 1860, July 27.—N° 1829.

JEYES, JOHN.—This relates to an improvement in the mode of attaching the uppers of boots and shoes to the soles. The inventor states that, instead of employing a narrow straight strip of leather as a welt, he uses "a welt shaped in the usual manner, but divided into two parts down the middle; each of these parts is sewn on to the upper leather as when a marginal welt is employed, the upper lying flat while the welt is being sewn to it. The two edges of the welt where it has been divided are then turned over towards each other, and may, if desired, be attached the one to the other, or to the sole. The edges of the sole can then readily be sewn to the welt by a sewing machine."

Another part of the invention consists in adding to the usual rising feed plate "a small cutter, which penetrates the sole leather " each time it rises, and thus progressively it makes a groove in " which the stitches may bury themselves."

[Printed, 10d. Drawings.]

A.D. 1860, August 2.—N^o 1869.

FORD, WILLIAM, and PROCTER, THOMAS.—(*Provisional protection only.*)—This invention comprises the following:—

(1.) The use of a "slotted crank to drive the shuttles so that " the necessary rest for the shuttle" may be obtained.

(2.) Constructing the needle carrier and presser foot in such a manner that the feed is regularly maintained by the working of the former. "The foot proper is furnished with a heel which " rises up at the back of the leg which carries the foot. By " means of screws the amount of feed can be adjusted."

(3.) Passing the thread through the eye of a lever which is depressed at each stroke of the needle carrier, "and so keeps the " thread in proper tension."

(4.) "The employment of a spring to press against the reel " carrying the thread, together with a screw for regulating the " pressure."

(5.) "In the employment in the shuttle carrying the thread to " form the lock, of a spring, which pressing against one end of " the spindle of the thread carrier inserted in the shuttle prevents " it from playing or becoming loose therein."

[Printed, 4d. No Drawings.]

A.D. 1860, August 3.—N^o 1876.

HALL, JOHN.—(*Provisional protection only.*)—The inventor obtains the necessary motions for the "feed needle and shuttle " from a cam or eccentric fixed to the under part of the machine." A rod is connected by one end to this cam, and by the other "to a plate under the feeder and vertical needle; the motion thus " communicated gives the necessary horizontal movement to the " feeder and shuttle." The vertical movement of the needle holder is also communicated through the same cam. The stitch is also regulated by a screw. The thread is wound on the shuttle bobbin in the following manner:—two "small spindles" are fixed in brackets "outside of the machine, one of the said spindles

" having a disc large enough to come in contact with the periphery of the driving wheel, the other small spindle has a spring upon it, so that the shuttle bobbin being placed between the two spindles the spring holds it in its proper position, and when the driving wheel revolves it turns the said spindles by the disc, and consequently the bobbin also."

[Printed, &c. No Drawings.]

A.D. 1860, August 3.—N° 1885.

CLARK, WILLIAM.—(*A communication from Alphonse Maureau.*)—(*Provisional protection only.*)—An improved embroidering machine which produces the chain stitch. The usual vertical needle is replaced, in this machine, by a hook somewhat resembling that used for crochet work. The looping arrangement consists of an eccentric or bent tube revolving on a hollow axis under the needle. The thread which is being used passes through this tube and hollow axis. In working the machine, the needle or hook descends through the fabric, then the tube, or "catch" as it is called, performs a revolution round the needle, of course carrying the thread with it. The needle then rises and draws with it the loop of the thread formed around it. The fabric then traverses, and the catch returns to its normal position to await the next descent of the needle.

[Printed, &c. Drawing.]

A.D. 1860, August 9.—N° 1932.

MAUVILLIN, PIERRE.—(*Provisional protection only.*)—This invention is intended to enable the attendant to guide the needle over the work in embroidering machines. To effect this the portions of the framing carrying the working parts are mounted by a ball and socket joint and a pivot, in such a manner that by means of two hand wheels in the front part of the machine, it can be moved in various directions over the fabric. There is also a method of regulating the needle carrier, and "a glass plate, pierced with a hole for the passage of the needle, is placed between the needle carrier and the material" to keep the latter in position and to enable the work to be seen through it.

[Printed, &c. Drawing.]

A.D. 1860, August 18.—N° 2000.

FOXWELL, DANIEL.—The inventor makes use of “a bell-
“ cranked lever with a point at one end to take hold of the loop
“ and open it out and keep it in a proper position for the upper
“ needle to pass through; one end of the lever is formed at an
“ angle of about 30° from the straight line and works on a pin or
“ pivot as a centre, a bowl being attached to the elbow of the
“ lever working in a cam.” The needle is placed in its holder
“ with its eye at an angle to correspond with the angle of the
“ lever.”

[Printed, 10d. Drawing.]

A.D. 1860, August 24.—N° 2044.

CLARK, WILLIAM.—(*A communication from Charles Louis Roguier.*)—“This Invention relates to the reproduction of all
“ kinds of patterns or designs, engravings, or others in Berlin or
“ other wool work by means of an apparatus which exhibits stitch
“ by stitch the different wools to be employed. The materials
“ and method of operating according to this Invention are the
“ same as in ordinary, as far as regards the use of canvas, wool,
“ and needles, the improvement being the facility afforded for
“ copying all sorts of coloured designs which may be obtained
“ anywhere at very little expense, instead of using those made on
“ the canvas, or on ruled squares of paper as usual.” The appa-
ratus consists of a frame in which the article to be copied can be
mounted, and, by means of fine wires or threads, divided into a
number of squares.

[Printed, 1s. 4d. Drawings.]

A.D. 1860, August 29.—N° 2090.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Edme Germain Bossuat.*)—(*Provisional protection only.*)—“Im-
“ provements in apparatus for manufacturing embossed or figured
“ fabrics in colours.”

“This invention relates to tambour frames and such like
“ machines, and particularly to the box which carries the threads
“ (boite plongeante), and to its appendages. This box in its
“ ordinary form extends a little beyond the breadth of the fabric
“ manufactured, and is formed with plain sides on the interior,

" and with a number of equal and equally spaced teeth or " angular projections on its lower side externally. Between these " teeth the box is divided by a series of divisions or slits, which " extend entirely across the box, and rise nearly to the top " thereof, leaving only an undivided rim or upper portion. The " box is furnished with a lid or cover, from which depend nume- " rous leaves or plates, which are properly adjusted as to number " and position with the vertical slits aforesaid. This cover has " imparted to it a reciprocating motion, by means of which the " said plates are alternately moved from one slit to the adjacent " one and back again. The embroidering or figuring threads are " carried in small tubes lying across the bottom of the box, one " to each tooth, which tubes are easily moved to and fro by and " with the plates, without passing into the slits of the box, " through which, however, the threads from the tubes are led to " the fabric. The warp threads upon which the box is placed are " alternately raised and depressed in the slits in the box, the " thread tubes and threads being suitably passed to and fro " through the warp spaces by means of the cover and its depen- " dent plates in such manner as to produce the pattern required. " The inventor states that this system of weaving has " hitherto only been employed for the production of embroidery, " that is, for making the thread of the weft float over certain " spaces of the fabric, but he proposes in the present invention " to apply it to the production of various other figured fabrics " in which the warp and weft threads cross and interlace each " other. . . . For this purpose, in place of raising all the " threads, as in the embroidering process, he raises the half, " third, or other part only, according to the fabric required. . . . " In order to adapt the apparatus, . . . the inventor modifies " the form of the box in several ways. In the first place he " provides for employing any desired number of thread tubes to " each tooth, and adopts means for preventing the several threads " of each tooth from mingling together. . . . He sometimes " prefers to prevent the mingling of the threads by forming a " division or slit along the front of the box, extending from one " vertical slit to another throughout the length of the box, so that " the threads may pass successively, and not together, into the " vertical slit. In the next place he adopts a device or devices " for preventing the small tubes from choking the vertical slits, " and from rolling together when the box is not exactly adjusted.

" This he sometimes prefers to accomplish by forming slightly
 " curved depressions, in which the several tubes lie when required
 " to be at rest. He further, in some cases, removes the front of
 " the box below the rim or upper portion before mentioned, to
 " prevent the warp threads from entering the horizontal instead
 " of the vertical slits, and so obstructing the work. Finally, he
 " adopts a contrivance for confining the thread tubes to their place
 " without interfering with their rolling motions. This he prefers
 " to do by forming upon their back ends rings or discs which
 " run in grooves in the back of the box."

[Printed, *ad.* No Drawings.]

A.D. 1860, August 31.—N° 2107.

SALISBURY, SILAS COVELL, and DICKSON, JOHN FARRELL.—(*Provisional protection only.*)—"The object of this invention is to simplify double-thread sewing machines, and thereby to reduce the cost of their manufacture." This is accomplished by working the vertical needle and feeding foot directly from the driving shaft." A cam is mounted on the end of the shaft and this bears against the stem of the feeder. An eccentric pin projects from this cam, which works in a slot in the needle bar and so raises or depresses the needle. "This slot is horizontal for the greater portion of its length; but at one end it curves upwards to allow the pin to make a portion of its rotation without acting on the needle bar." Thus the needle receives a "differential motion requisite for retaining the loop in a slack state during the passage of the shuttle."

The shuttle is driven by means of "a vertical rocking spindle mounted in the hollow standard of the machine, and fitted with an arm that carries a bowle working in the groove of a cam attached to the driving shaft." A horizontal arm, underneath the table, connects the foot of this spindle with the shuttle carriage.

[Printed, *ad.* No Drawings.]

A.D. 1860, September 7.—N° 2158. (* *)

NICOLL, BENJAMIN.—(*Provisional protection only.*)—Magnetizing all kinds of needles, also applicable to those parts of sewing and other machines which hold needles.

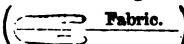
The inventor states:—"My invention is magnetizing all kinds of sewing and other needles. Those used in machines for the

" purpose of making them cling to the parts while being fastened, " and also to magnetize the parts of the machines that hold the " needles, so as to allow my invention to be used where the " needles are not magnetized.

" My invention will facilitate the adjustment of the needles by " preventing their slipping while being placed in their proper " position, thereby saving time, and preventing the breakage of " them through being improperly placed previous to the machine " being set in motion; and will also allow sewing and other " needles to be more easily threaded, by applying the invention " either to the needles or the holders for them."

[Printed, 4*d.* No Drawings.]

A.D. 1860, September 15.—N° 2242.

BRADBURY, GEORGE FRANCIS, and KING, JOSEPH JACKSON.—(*Provisional protection only.*)—This invention refers to the "guide" used for "folding the binding material into the form " it is required to assume" for sewing on the edges of fabrics. By this improved guide "the raw edges of the binding are " doubled or turned inwards as here shewn ( Fabric.)

" before being sewn on to the fabric." When the binding enters the guide it assumes the form "of about two-thirds of a circle." This is effected by "a double interior and exterior tube confining " the binding to such shape, and near the delivery end of the " guide is placed an inclined plane or conically-formed 'rise' or " projection against which the middle part of the binding

" presses, and is thereby bent into the form  in which shape it " emerges from the end of the tube, and is drawn out at about " a right angle through a curved end of the guide, which has the " effect of reversing the position of the selvedges of the binding, " turning them from the outside to the inside in this form " ." It then passes a guide which places it in position for sewing.

[Printed, 4*d.* Woodcuts.]

A.D. 1860, September 19.—N° 2283.

SIMON, MAXIMILIAN.—(*Provisional protection only.*)—This is for an adaptation to sewing machines whereby the fabric is crimped

or gathered into a frill. The effect is produced by separating the two fabrics by a thin plate of metal, which extends to the needle, and feeding one fabric faster "or with longer strides" than the other. The sewing is performed at the same time.

[Printed, 4*d.* No Drawings.]

A.D. 1860, September 26.—N^o 2340.

McCROSSAN, JOSEPH.—(*A communication from George Juengst.*)
" This invention relates to improvements in the class of sewing
" machines using a straight needle with a shuttle and feed wheel,
" such improvements comprising a means of giving motion to
" the needle, with special regard to the formation and condition
" of the loop of the needle's thread; also means for taking up
" and tightening the thread, and means for actuating and regu-
" lating the feed." The needle bar is worked from a crank
" through a short link or connecting rod, to which rod is fixed
" the take-up finger or guide. The spindle or boss of the pin
" working the needle bar is itself actuated by means of cranks or
" eccentric pins and a link from the first motion spindle which is
" placed a little to one side." Thus a differential motion is com-
municated to the needle. A link from the crank of the first
motion spindle gives a rocking motion to the shuttle spindle and
also works the feed wheel.

[Printed, 8*d.* Drawing.]

A.D. 1860, October 5.—N^o 2409.

CALLEBAUT, CHARLES.—A machine for making the overcast
stitch. On the main shaft of the machine is an eccentric which
works a series of "catch levers, which set in motion a ratchet
" wheel, the axis of which has a screw thread formed on it, and
" gears into a screw nut fixed to a presser or comb holder, under
" which the article to be sewed is placed." By means of these
catch levers the stitch can be varied. "A hooked needle worked
" by a second eccentric serves to pass the thread through the
" article to be sewed, the thread being placed on the said needle
" by a distributor worked by an eccentric. A hook is made to
" separate the two ends of the thread on its leaving the article to
" enable a distender provided with a hook to stretch the needleful
" of thread on a drum," which may be smooth or spirally grooved.

" This drum may be covered with a sheet of india-rubber or other " suitable thin material to keep the thread in the grooves." A circular or curved comb is also claimed.

[Printed, 10d. Drawing.]

A.D. 1860, October 17.—N^o 2535.

YOUNG, GAVIN.—(*Provisional protection only.*)—The inventor proposes to construct a hemming and binding gauge for sewing machines in the following manner :—To a rectangular plate, so contrived as to be readily adjustable to the table, are attached " two blade springs, which extend outwards at right angles to " the plate ; these springs are of corresponding shape, and they " are arranged parallel to each other. At the inner ends the " springs are separated by an intervening piece of brass to about " the extent of a tenth of an inch, but at the free extremities they " touch each other. The springs are twisted longitudinally, so as " to form a screw-like figure, the space between them forming " a spirally curved path or channel. For hemming purposes the " springs have two complete turns . . . and to effect the " proper turning in of unravelled threads two small U-shaped " pieces of metal are soldered to the edges of the spring at " different points in their length."

[Printed, 4d. No Drawings.]

A.D. 1860, November 7.—N^o 2745.

NEWTON, ALFRED VINCENT.—(*A communication from William Cleveland Hicks.*)—(*Provisional protection only.*)—“The object of “ this invention is to give security to seams formed by the “ tambour or single-thread stitch, and prevent them from “ unravelling or ripping up when from any cause one stitch has “ given way. To effect this object it is proposed to introduce “ into the line of stitches at suitable intervals short stitches which “ will retain the loop of the adjacent long stitch that has been “ set free in its own loop, the shortness of this latter having the “ effect of binding on the loop that has been set free by the break “ in the concatenation of stitches.” The variation in the length of stitches is performed by the feed apparatus.

[Printed, 4d. No Drawings.]

A.D. 1860, November 8.—N° 2757.

NEWTON, ALFRED VINCENT.—(*A communication from William Cleveland Hicks.*)—(*Provisional protection only.*)—The first part of this invention has for its object an arrangement of the tension apparatus in sewing machines, “whereby a large amount of slack “thread may be thrown off to form the slack loop through which “the shuttle passes,” thus admitting of the use of a large shuttle. Before the thread is passed through the eye of the needle it is threaded through a loop in a cranked arm, which arm is suitably worked by the rise and fall of the needle bar. Or it may be passed through “an inclined slot cut in a bracket piece attached “to the vertical needle bar.” This “slotted bracket piece” works in a guide with an inclined face on the needle bar guide box.

The second part relates to a feed wheel which may be raised or lowered to suit various thicknesses by means of an eccentric lever.

[Printed, &c. No Drawings.]

A.D. 1860, November 13.—N° 2773.

WOOD, JOHN.—(*Provisional protection only.*)—The inventor describes the object of his improvement as follows:—

“Instead of stitching the thread or silk close to the eye of the “needle having a double thread near the eye, and a single thread “the remaining length, I propose to use a double thread the “whole of the length, stitched together near the eye of the needle “in the ordinary manner, or left loose, thus allowing two threads “to be worked together instead of one as hitherto done. The “double threads may be of the same or different colours, and “also of the same or different materials. By using the double “thread one stitch formed by the pentagraph forms two stitches “in each repeat of the design, thus economising the time of the “worker.”

[Printed, &c. No Drawings.]

A.D. 1860, November 15.—N° 2806.

NEWTON, ALFRED VINCENT.—(*A communication from Dwight Tracy.*)—(*Provisional protection only.*)—“This invention relates “to certain means of controlling the needle thread of a sewing

" machine, whereby the quantity supplied to the needle is caused
" to be always in proportion to the thickness of the cloth or other
" material being sewn, and to the length of the feed movement,
" and a uniform tightness of stitch is produced whatever variation
" may occur in the thickness of the material, or however the feed
" movement may be varied, or whatever may be the relative sizes
" of the needle and thread, obviating entirely the necessity of any
" manual adjustment for the needle thread. It also relates to
" certain means of controlling the shuttle thread, whereby it is
" caused to be drawn to a uniform tightness in the cloth, whatever
" may be the quantity of thread on the bobbin, or from whatever
" part of the bobbin the thread may be drawn." In addition it
relates to a peculiar knotted stitch, which is made by means of
the apparatus above referred to.

[Printed, 4d. No Drawings.]

A.D. 1860, November 16.—N^o 2818. (* *)

BODMER, RUDOLPH.—(*A communication from Carl Bernhard Gruner and George Adolph Keller.*)—" Improvements in machinery
" or apparatus for folding, and for folding and stitching sheets of
" paper and other material."

The papers are taken one by one from a pile and placed upon the platform in the machine where they are adjusted to guide pins. Two plates forming the platform are divided by a narrow slot, and the paper is placed so that the centre line between the edges of letterpress falls as nearly as possible in a line with the centre of this slot. A knife descending doubles the paper and forces it through the slot between two sets of elastic surfaces, where a second knife doubles it a second time by forcing it through a slot, after which it is again folded by a third knife in a similar manner. It then passes between glazing rollers which deliver it from the machine. The stitching takes place before the last folding and on the line of the last fold. The needles are fixed to a bracket which has a backward and forward motion in the direction of the folded paper. The threads from the bobbins are seized at the ends by small pincers, cut to the required lengths by shears, and placed upon the needles, which pierce the paper and deposit the threads in it. As soon as the needles have pierced the paper, the folding blade advances, folds the paper for the last time, and forces it between the pressure rollers as already described.

2. The machine for folding newspapers is entirely self-acting, and is distinguished from 1 by having apparatus for seizing the sheets and removing them from the piles, and placing them ready for receiving the first folding. Each receiving table has a table corresponding with it. The sheets intended to form the outside when folded are laid on the lowest, and those to be inside on the uppermost table. If two sheets are to be folded together, the knife descending breaks and folds the first sheet, and with this sheet upon it strikes and doubles the second sheet on the lower platform, forcing the two sheets, one on the other, between the elastic surfaces, which holds them ready for being folded the second time, after which the operations described for pamphlet folding are repeated. The sheets are seized and placed on the platform by tubes or hollow bars with small perforated projections on their surfaces, and connected by piping with an air cylinder. The hollow bar on the upper platform is connected with that on the lower platform, and both are made to move across and reach the sheets at the top of each pile, when by exhausting the air in the bars the sheets adhere to the bars until they reach the place for the first folding, where they are released.

[Printed, 1s. 6d. Drawings.]

A.D. 1860, November 21.—N^o 2857.

MYRING, CHARLES.—“Improvements in the manufacture of “covered harness furniture, buckles, slides, and other similar “articles, and in the machinery or apparatus to be employed “in such manufacture.” The leather is first fitted, say to a buckle, by means of dies, after which it is stitched by a sewing machine. As the covering requires to be stitched close to the metal form, it would be impossible to avoid breakage of needles, unless means were adopted to allow of the needle travelling closely round the metal without breaking upon it. The machine is accordingly modified as follows:—The feeder, the bed and the foot are removed, leaving the needle free to work in its ordinary direction. The inventor provides “a cranked feeder, and by “removing a portion of the bed plate of the machine” the feeder is made to work on the right hand side of the needle instead of the left, which alteration enables the user “to feed on “the edge of the leather covering instead of upon the covered “metal blank” by which the surface of the buckle is not dis-

figured. The feeder is also raised "as much above the bed plate " as may be necessary for the thickness of the article under " treatment, so that the buckle may be held firmly and steadily " to the needle and yet be capable of being turned round with " perfect freedom." The bed, where the needle passes to the shuttle, is raised to a level with the feeder and thus forms a guide in turning the buckle. The alteration in the foot consists "in forming that part with a crank . . . so as to enable it to " work over the feeder, thus forming a guide for the upper edge " of the buckle, the top ridge of which is held close to the edge " of the foot, whilst the lower or under ridge is guided by the " raised bed."

[Printed, 1s. 4d. Drawings.]

A.D. 1860, November 24.—N° 2886.

JOHNSON, JOHN HENRY.—(*A communication from the Grover and Baker Sewing Machine Company.*) — This invention relates more particularly to sewing machines in which a shuttle is used with an eye-pointed needle, but many of the improvements are applicable to other kinds of sewing machines. It comprises the following improvements :—

- (1.) "A reciprocating retaining hook moving with and in the " direction of the shuttle or nearly so." It enters the loop of the needle thread and holds it open for the entry of the shuttle, after which the loop is liberated.
- (2.) Actuating the shuttle with its retaining hook, and the needle lever by means of one and the same crank pin.
- (3.) The use of a pad of leather, bearing lightly on the shuttle, " thereby slightly nipping the shuttle thread and preventing the " formation of slack near the needle on the return stroke of the " shuttle."
- (4.) "The use of a single or double loop stopper in combination " with a reciprocating retaining hook or hooks and shuttle, the " object of such stoppers being to facilitate the entrance of the " point of the shuttle and retaining hook into the loop of the " needle thread, and to extend the loop."
- (5.) Attaching the shuttle bobbin to a hinged support at one end of the shuttle, so that it may be easily removed.
- (6.) "Causing the shuttle thread, as it leaves the reel, to pass " under a curved bar." Thus the thread is always drawn off in

planes perpendicular to the axis of the bobbin, whereby a more even strain is exerted.

(7.) Passing the thread between two discs, slightly concave at their centres, and round the spindle on which they are carried. These discs may be pressed together by a screw, and thus increase the tension.

(8.) Winding the bobbins. The bobbin to be filled is fitted to the end of a spindle and pressed against it by a spring. The pressure of the spring causes a friction pulley on the spindle to come in contact with the edge of the main driving pulley of the machine, and so set the bobbin in motion.

(9.) The use of "a second reciprocating hook in combination with the before-mentioned retaining hook, shuttle, and eye-pointed needle, the object of this second hook being to catch the loop after it has passed over the heel of the shuttle, and detain it until finally drawn up by the needle, thus controlling the slack of the loop."

[Printed, 1s. 6d. Drawings.]

A.D. 1860, November 27.—N° 2914. (* *)

PAPE, THOMAS.—(*Provisional protection only.*)—"Improvements in circular frames for manufacturing glove and other fabrics, and in apparatuses for stitching and finishing the finger ends of gloves and for 'boarding' gloves."

This invention, as far as it relates to circular frames, has no connection with the present series. The other above-mentioned improvements are described as follows:—

"My improvements in apparatuses for stitching the ends of the fingers of gloves consist in the employment in stitching machines of a plate furnished with points, on which the ends of the fingers are to be held while being stitched, and terminating at top in a circular-toothed rack; a toothed quadrant works into the rack. Thus while the stitching machine is at work the toothed quadrant causes the glove finger end to move round in a curved direction with the rack plate, and have the requisite curved stitching applied to unite the ends; after being stitched, the glove finger ends pass on and come under the action of a pair of curved shears, which remove all the material beyond the curved line of stitching."

" My improvements in apparatuses for 'boarding' gloves " consist in adapting round a wheel or ring a series of frames, " each frame being intended to hold a single glove stretched on " its board. I place a stove at or about the centre of the wheel " or ring, open all round, the frames are all caused to travel " round the ring and keep the same side of the glove towards " the centre until they arrive at about one half of the circum- " ference of the ring, when the frames are caused to turn, and " for the remainder of their course they present the opposite side " of the glove towards the centre."

[Printed, 4d. No Drawings.]

A.D. 1860, November 28.—N° 2927.

JEYES, JOHN.—" Improvements in the manufacture of boots " and shoes."

Instead of attaching the "upper" to an insole and welt, as is usually done, or to a welt and outsole, as described in the inventor's Specification, No. 1829, A.D. 1860, the "upper" of a boot or shoe is fixed at its lower edge "to the edge of a welt or " interposed piece, so as to admit of such lower edge of the upper " being turned outwards, and be itself sewed to the sole." A solution of cobbler's wax is applied to the surfaces in place of waxing the thread. "To prevent the drag of the stitches (by " which the outsole is fixed) acting prejudicially on the edge of " the upper" a narrow strip of leather is introduced on the upper side of the turned-out edge of the "upper," which strip is sewn through together with the "upper," welt, and outsole.

[Printed, 8d. Drawing.]

A.D. 1860, December 17.—N° 3093.

HILL, JOHN WILLIAM.—(*Provisional protection only.*)—The inventor claims the following improvements in sewing machines, *viz.* :—

The use of two or more needles, with the necessary bobbins, tensions, &c., for the purpose of performing two or more rows of stitching contemporaneously.

The needles are to be arranged with their eyes all in the same direction, so that the loops shall be set in a row to enable the shuttle thread to pass them all. The tension bands are regulated for the purpose of tightening the needle threads in such a manner

that they may, when desired, be drawn back close to the surface of the fabric, " by which process the shuttle thread having passed through all the loops is by them drawn in the direction of the respective loop holes from side to side of the seam, or from row to row of the stitching, whereby the use of tape or other material used as a stay under the seams of the cloth . . . is superseded, and the seam or work is made doubly strong."

The needles or needle bars are capable of adjustment for the purpose of regulating the distance between the rows of stitching and preserving them uniformly parallel.

[Printed, 4d. No Drawings.]

A.D. 1860, December 20.—N° 3133.

WHITEHALL, EDWARD.—" Improvements in machinery for embroiderying on lace and other fabrics." The inventor describes the nature of his invention as follows:—It " consists of machinery in which are employed a number of slightly curved or straight needles, each needle having two eyes; each of these needles is fixed at one end of a small rod or shaft, at the other end of which is a mitre wheel, the rods are placed in bearings at suitable distances apart on what I term the needle carrier. The fabric is moved vertically or horizontally according to the nature of the design; when the needle carrier advances, it causes the needles, which are supplied with thread, to enter the fabric, and when the needle carrier recedes it causes each thread to form a loop, each loop is then caught by one side of a double instrument in the form of a T, which catches the loop right or left as required, the stem of this instrument being fitted with a spring slide for holding the loops; the fabric is moved the length of a stitch, the instruments advance a little towards the fabric with the loops, and thereby cause them to expand, the loops being lightly held to the top of the instruments, the instruments then move in the required direction, and place the loops over the spots where the points of the needles have next to pass through, while in so doing the loops are drawn from their hold, the needles entering through the fabric and through the loops draw the loops round the stems of the needles, the holding slides are drawn back for the instruments to catch the newly formed loops. These movements are repeated and when the pattern is complete the ends of the threads are

" secured by two bars which are placed one above, the other below the needles ; one of these bars is fitted with springs, " and they are caused to advance towards each other and hold " the ends of the threads ; the threads are then cut between the " bars and the fabric, the threads being held until two complete " stitches are made in a fresh part of the material ; the instru- " ments holding the loops on the opposite side draw the ends " which have been cut completely through the fabric, by which " means the stitches are fastened off ; extra pressure is then put " on the holding slides, while the remaining ends are cut off from " the fabric."

The invention further consists in assisting the passage of the needle by giving it a rotary or revolving movement.

The inventor also proposes to apply a shuttle to a similar description of needle, the shuttle thread of which is formed into a loop previously to the shuttle entering through the needle and its thread, or through its own loop.

[Printed, 2s. Drawings.]

1861.

A.D. 1861, January 5.—N° 30.

GILBEE, HENRY. — (*A communication from Jacques Marie Clement Debras and Gabriel Léonard Bongard.*)—Improvements in machinery for forming the "overlap," or "glove stitch." The sewing is performed by means of a circular needle mounted on the axis of a pinion and receiving its reciprocating motion from a cam on the driving shaft through a segmental rack. "The needle is placed within a recess in which is fixed the hooked "pin or thread separator, which serves to separate, at the proper "moment, the two branches or parts of the thread passing "through the eye of the needle. A small hook or pin placed on "the fore part of the recess serves to expand the loop of the "stitch." The looper is joined on the end of a slide, moved by a cam, through the intervention of a lever. "A stop moved by "another cam causes the hook or looper to move aside at the "required moment, in order to allow the circular needle to pass "when advancing with its thread. "The presser does not receive

" any motion from the driving shaft;" a cylindrical roller presses on the inclined plane of the presser, which is regulated at will. The feeder is also provided with an inclined plane, on which a cam presses.

[Printed, 1s. 4d. Drawings.]

A.D. 1861, January 12.—N° 89.

WHIGHT, GEORGE.—(*A communication from Theodore Stuart Washburn.*)—“This invention relates to machines intended to “ produce the interloop stitch. The needle is worked by a crank “ motion from the main driving shaft through an adjustable “ fulcrum, so as in the second part of its motion to feed the “ cloth under operation, the length of stitch being regulated by “ the distance of the fulcrum from the cloth. The stitch is “ formed by means of the combined action of the needle carry- “ ing the under thread, and a hook or claw for holding aside the “ same, both being worked by a horizontal lever on the under “ side of the bed plate, actuated by a vertical lever worked by “ two cams on the main driving shaft. At the moment when “ the loop is formed by the vertical needle in its upward move- “ ment, the horizontal needle carrying the under thread is made “ to pass between the thread and the vertical needle by the “ action of the said horizontal lever, the hook or claw at the “ same moment being made to catch the under thread (by means “ of a driver on the end of the said lever), and hold the same “ aside until the vertical needle descends, thereby forming the “ interloop stitch.”

[Printed, 10d. Drawings.]

A.D. 1861, January 23.—N° 187.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Edouard Paul Lecerf.*)—(*Provisional protection only.*)—A machine for forming the “glove stitch” and particularly applicable to the sewing of circular or curved parts. The article to be sewn is placed on a travelling carriage, which has a lateral motion and a reciprocating to-and-fro motion communicated to it through toothed gearing. A suitable curved guide is placed over the materials to be sewn.

The shuttle and needle carrier are put in motion in the ordinary manner.

[Printed, 4d. No Drawings.]

A.D. 1861, January 29.—N° 232.

ROBERTSON, JOHN.—(*Provisional protection only.*)—This invention consists in adapting rollers to the presser foot of sewing machines. They may be arranged in different ways; one on each side of the needle, or two placed on one side, one in advance of the other, and a third occupying the whole breadth of the presser in their rear. There is a groove round the latter, near one of its ends, for the needle to work in.

[Printed, 4d. No Drawings.]

A.D. 1861, February 1.—N° 270.

HART, WALTER.—This improvement consists in so constructing sewing machines that they may be used for sewing tubular articles without having to be specially altered for such work. The inventor so arranges his mechanism that the apparatus for working the needle is transverse to that which drives the shuttle. Thus the box which contains the latter projects as an arm or cloth table, which may be brought through the sleeve or other tubular article. When other than tubular work is to be done, the table may be made flat and larger by adding a wood platform.

[Printed, 4d. Woodcuts.]

A.D. 1861, February 2.—N° 285.

WILSON, WILLIAM NEWTON, and ROWLETT, WILLIAM TERTIUS.—The following improvements in sewing machines:—

(1.) A shuttle capable of holding more thread than usual. The spool is shorter than the ordinary shuttle spool and "is placed with its axis transversely to the shuttle, but its depth is increased so as to hold the required amount of thread." This shuttle is driven in a semicircular race by a radial driver, worked by the cam which moves the vertical needle.

(2.) An arrangement of the lock-stitch machine consisting in the use of "a barbed needle, working from below upwards through the fabric, and seizing the thread of a spool above the fabric." It draws this thread down through the material and round a stationary spool below.

(3.) Binding the edges of button holes, &c. By one arrangement "two needles and threads are employed, the one being of a circular or semicircular form, and the other straight, but both

" are actuated from the under side of the cloth plate. The " thread of one needle is looped into the thread of the other, " one needle working through the fabric near its edge, and the " other outside the fabric or within the button hole, and simply " looping or locking the stitch of the other needle." " According to a second modification two slightly curved needles are " used, each carried by a separate needle arm, the one working " upwards through a loop of the upper needle thread held open " by a looper and through the cloth, and the other downwards " outside the cloth, but through the loop of the under needle, " which has been opened by a slight backward movement of such " needle." The looper is tapered and grooved " so as to allow " the lower needle to pass through the loop." Small studs are provided besides the looper to maintain the loop.

(4.) An arrangement of apparatus for stitching button holes and producing the herring-bone stitch. " It consists in the combination of the vertical needles carried by one slide or needle " lever, and each having an independent lateral motion, so as to " enable them to reverse their positions." Loopers or shuttles are used with these needles, and a suitable guide for regulating the position of the edge of a button hole is mentioned.

(5.) Effecting 'darning' by machinery. The inventors propose to employ " a row of barbed needles, with a self-acter, as used " in stocking frames; such needles being carried by a slide or " lever arm, and made to pass upwards through the fabric to be " darned. The thread is supplied to the needles by a carrier, " and is 'divided' by sinkers, each held forward by a spring." By another plan they propose to darn fabrics " by means of warp " threads, each needle having a guide and thread of its own." By means of a third arrangement they use " a row of eye-pointed " needles above the fabric, each being supplied with a separate " thread. These needles are so worked as to produce a shed, " through which the shoot is passed by a horizontal needle or " shuttle."

(6.) " Another part of this invention consists in the production " of combined tambour and lock-stitch sewing, or " tambour stitch only if desired. " The stitch may be obtained either by " passing the loop of the tambour stitch over a stationary spool, " or by throwing an ordinary shuttle and second thread through " the same loop."

(7.) An arrangement for "producing the knot stitch and the lock stitch in one machine. This mechanism consists of a hook or hooks revolving horizontally round a stationary spool or thread case contained in a chamber or recess in the bed plate of the machine. A stationary stud or pin is fixed vertically in one side of the recess which contains the thread case, round which stud or pin the needle thread is drawn by the hook as it revolves, and consequently the strain of the thread on the needle is considerably reduced." By adjusting the hook and reversing the motion the ordinary knot stitch may be made.

(8.) An improved hemmer with "only half a twist" and so constructed "that the fabric after being once folded in the hemmer forms the second fold itself, by which means a narrower hem is obtained."

[Printed, 3s. 2d. Drawings.]

A.D. 1861, February 8.—Nº 314.

DREVELLE, ADOLPHE.—This process of "embroidering or ornamenting woven fabrics," &c. is thus described by the inventor:—"I take two pieces of cloth or other material, and embroider or ornament them both together, either by an embroidery machine, sewing machine, jacquard, pentagraph, or other process of sewing, and I then separate the two materials by cutting the threads which constitute the plain or embroidered figures, and either before or after so separating them I attach, if desirable, to the back of each material any fabric by means of some suitable glutinous matter, which strengthens the material, and also gives a better pile to the face or embroidered part of it."

[Printed, 4d. No Drawings.]

A.D. 1861, February 13.—Nº 367.

CLARK, WILLIAM.—(*A communication from Louis Alphonse Maureau.*)—This invention relates to a machine for embroidering with the chain stitch. The needle, which resembles a crochet hook, rotates so that the necessity of "changing the position of the fabric according to the pattern to be worked" is obviated. But in working straight lines the rotating movement is dispensed with. Around the needle there is a circular or tubular guard which acts as a presser on the fabric, so that the needle may rise

after penetrating without obstruction, together with the thread taken from beneath. Below the table there is an eccentric or spiral hooker made tubular, so that the lower thread can pass through it. By means of its rotation the lower thread can be wound round the needle each time it descends below the fabric. A spring tension apparatus is also alluded to.

[Printed, &c. Drawing.]

A.D. 1861, February 18.—Nº 399.

JOHNSON, JOHN HENRY.—(*A communication from the Grover and Baker Sewing Machine Company.*)—This invention consists in apparatus for “making what is commonly known as a double-thread looped stitch, or rather seams made of a succession of “such stitches, such seams presenting on one side an upper or “needle thread not differing in looks or arrangement from the “stitch of shuttle thread machines, while on the other side the “threads are looped together in a chain.” The stitch is made by an eye-pointed needle, a hook, “either reciprocating or rotating, and “a thread post or guide, which forces the lower thread to make “a curve or angular bend in its passage from the thread bobbin “to the cloth.” “In the operation of the machine the needle “descends as near as may be in the angle or very corner of the “bend of lower thread, and then rises a little to open a loop, the “hook then advances, seizes such loop, and pulls it out below the “lower thread; the needle continues to rise, the hook continues “to spread the loop of upper thread, and then carries it over “the bend or bight of lower thread;” when the needle descends again, it “passes between the bight of lower thread and the loop “of upper thread that is spread below the cloth; when the point “of the needle is below the bend of lower thread, the loop of “upper thread is released or cast off, the needle rises and opens “a second loop of upper thread, and the hook again seizes and “spreads this new loop.”

“When the hook carries a loop of upper thread so as to enclose “the bend of lower thread, the thread post is enclosed by the “same loop, and when the hook spreads the new loop it tightens “up the cast off one, drawing it off the post or guide, and up “against the lower side of the cloth, and thus tightens the “stitch; one stitch is tightened by the operation of forming the “succeeding one.”

[Printed, &c. Drawings.]

A.D. 1861, February 20.—N° 416. (* *)

NICOLL, BENJAMIN.—(*Complete Specification, but no Letters Patent.*)—Magnetizing “needles used in sewing and other machines, applicable also to those parts of such machines that hold the needles, and applicable to all other descriptions of needles, and to scissors, and to thimbles treated in like manner.”

This invention “consists in magnetising scissors, thimbles, and also all kinds of needles used for sewing purposes, including stitching, sewing, hemming, embroidery (whether done by hand or by machine), and also those parts of machines that hold the needles, so as to facilitate the adjustment of them to the machine, and by its means they can be placed quickly to the nicety required.”

The application of this invention “to scissars and thimbles will enable the sewer to place needles when not in use upon them, thereby preventing their being lost, and will enable persons to pick up needles more easily.”

[Printed, &c. No Drawings.]

A.D. 1861, February 25.—N° 483.

BIGELOW, LUCIUS AURELIUS.—(*A communication from George Chandler Prior.*)—Sewing boots and shoes. The operation of sewing the uppers of boots and shoes to their soles “may be conveniently effected by the formation of a seam which may pass entirely round the sole, and having but one beginning and one ending if desired. This seam is made with a hook or crochet needle, whereby stitches known as chain or tambour stitch may be produced; these stitches pass entirely through the parts united from the inside of the sole to its outer side, and by the mechanism employed the various curvatures of the varied forms of soles are equally and well provided for.” The bed plate supports a projecting horn or arm which “projects upward in an inclined direction, and contains in its projecting end an instrument termed a whirl, the office of which is to receive the thread through a small hole,” and to wind it by its rotation round the needle, “when this is in the central hole of the whirl,” so that when it rises it may carry the loop with it. A channel is cut in the upper side of the horn for the passage of the thread, and on the under side is a shaft driven by a rack and pinion, which communicates a reciprocating rotary motion to the

whirl. The needle is carried in a holder attached, with the feed apparatus, to the end of a goose neck, and is so placed over the horn that the axis of the needle is always in line with the axis of the whirl. "The needle with the feeding mechanism and the "whirl are made to rotate round the axial line of the needle and "whirl," so, by suitable mechanism, "the head work can be fed "upon the end of the horn in any direction" by simply turning a hand wheel conveniently placed for the operative. "It is an "object of considerable importance to keep the relative position "of the thread hole in the whirl to the hook of the needle, how- "ever the latter may be placed. To effect this, it is necessary to "connect the needle bar and whirl together, so that the rotation "of the former will cause a corresponding angular movement of "the latter, though leaving this free to rotate on its own axis for "the purpose of throwing the thread into the hook of the needle." Attached to the rotating head piece there is a "slide carrier" carrying a "slide" "whose function is to keep the previously- "formed loop from falling into the barb or hook of the needle "while it is bringing another loop through that last formed."

[Printed, 1s. 4d. Drawings.]

A.D. 1861, March 11.—N° 603.

TILLIE, WILLIAM.—(*Provisional protection only.*)—This invention consists in making frills by combining with sewing machines an additional foot actuated by wiper levers. This foot feeds in the portion of cloth to be fulled and stitched to the main fabric. By means of another lever the work may be taken in plain or fulled alternately without requiring to stop the machine.

[Printed, 4d. No Drawings.]

A.D. 1861, March 21.—N° 713.

HEAVEN, ALFRED, and SMITH, ROBERT.—This improvement consists in working embroidering frames by means of steam or other motive power, instead of by hand. A pulley or toothed wheel driven by a belt or otherwise is placed in combination with the carriage, and to reverse the motion of the carriage when it arrives at the end of the stitch, the embroidering threads are drawn tight, thereby giving motion to a lever, which will then change the direction of motion of the pulley or toothed wheel.

[Printed, 1s. 4d. Drawings.]

A.D. 1861, March 22.—N^o 716.

CRANSTON, WILLIAM MCINTYRE.—(*A communication from James Frost.*)—“This invention relates to the manner of communicating motion to the needle of a sewing machine, giving “it the proper periods of rest and motion, or the requisite “irregular motion.”

It is effected in the two following ways :—

(1.) At one end of the rocking shaft which gives motion to the needle is attached a small projecting arm or crank. This latter is attached to the needle carrier by a short connecting link. At the other end of the shaft is fixed another crank or arm, which, however, is curved and slotted. A bar is attached at one end to the driving crank of the machine, and passes through a swivelling guide near its upper extremity. This swivel guide is attached to the framing of the machine, “and the only motion of which it is “susceptible is a simple oscillation or rocking as the bar changes “its inclination by the rotation of the crank.” There is also a small pin attached to the aforesaid bar, and this pin works in the slot of the crank at the end of the rocking shaft. The working of the bar by the action of the crank, modified by the action of the swivel guide, causes the pin to move in a peculiarly curved line, like the Arabic numeral 8. The slot in the little crank is of such width as to allow the pin to travel freely therein. “It “follows that while the curve and the position of the slot coincide “with the motion of the pin, no motion is communicated thereto “by the crank, but whenever the slot is in any other position “motion is communicated.”

(2.) This method is somewhat like the previous one. The needle carrier is still attached by a connecting link to a crank at the end of the rocking shaft; but the slotted curved crank at the other end is replaced by a straight solid one. The bar attached to the driving crank is also employed, but it does not pass through a swivel guide. It is jointed near the middle to one end of a radius bar secured to the framing. Neither is there any small pin on the bar, but instead the end remote from the driving crank is connected by a short link with the crank or arm at the end of the rocking shaft. The effect of this compound motion is to give to the upper end of the bar, that is, where it is joined to the connecting link, “a motion in an irregular curve approximating to the form of a spherical triangle.”

[Printed, 1s. Drawings.]

A.D. 1861, April 1.—N° 802.

BOYD, JAMES EDWARD.—(*Provisional protection not allowed.*)—The inventor proposes to drive sewing machines by clockwork, and also claims the right of applying “insulators or paddings of india-“ rubber” for the purpose of deadening sound. He adds, “I “ claim the right of applying self-acting or other motive-power “ machinery to all sewing machines, whatever their make or “ construction.”

[Printed, 4d. No Drawings.]

A.D. 1861, April 2.—N° 816.

SICKELS, JOHN.—(*A communication from Elmer Townsend.*)—“ Stitching, uniting, and ornamenting leather, &c.”

The machine for this purpose “consists of a peculiar combination of a hooked needle, piercer, thread guide, feed apparatus, presser foot, tension apparatus, and a wax reservoir for “waxing the thread as fast as it is worked up. The thread or “twine is passed from its reel through a vessel or reservoir of “wax, which is kept in a melted state by a small lamp and a hot “water bath. From this reservoir the waxed thread passes over “and round a tension pulley regulated by a screw, and thence “through the eye of a horizontal vibrating thread guide. The “leather to be operated upon is held down by a presser foot, “which is elevated at each stitch to allow the leather to be fed “along, which feeding operation is accomplished by a lateral “motion of the hooked needle, which works upwards and sideways through an aperture in the table of the machine. Before “the needle or hook rises, an awl or piercer descends and perforates the leather, and the needle or hook then rises through the “hole so made and catches the thread, which is held in a proper “position by the thread guide; the hook then descends and “draws a loop through the leather. The leather is then fed “forward one stitch, and another hole is pierced therein by the “awl, when the hook again rises and draws down a fresh loop, “which is passed through the previous loop.” “A moveable “gouge or cutter” is employed for grooving the under surface of the leather, “so that the stitches may lie therein flush with “the surface.”

[Printed, 1s. 8d. Drawings.]

A.D. 1861, April 22.—N° 996.

BELDING, GEORGE WASHINGTON.—(*A communication from William Sparks Thomson.*)—(*Provisional protection only.*)—The patentee describes the invention as follows:—"My improvements consist in so arranging the sewing machine that it will hem cloth and sew on an edging at one operation, and I effect those improvements by having a reel of thread or other suitable material above or on the sewing machine, and the edging is fed through a guide directly over that part of the cloth which has just passed through the hemmer, so that the needle and thread secures and sews both the hem and the edging at one operation."

[Printed, 4d. No Drawings.]

A.D. 1861, April 22.—N° 997.

BELDING, GEORGE WASHINGTON.—(*A communication from William Sparks Thomson.*)—(*Provisional protection not allowed.*)—"Machines for making pointed tape trimming." It is proposed to arrange the sewing machine in such a manner that the tape shall be folded "in the required manner to present a series of points, and the tape so folded is fed under the needle or needles (when a double needle machine is used) and sewn."

[Printed, 4d. No Drawings.]

A.D. 1861, April 25.—N° 1034.

CALLEBAUT, CHARLES.—This invention has for its object to obviate the possibility of undoing the seam by drawing out the thread. The inventor uses a machine "provided with a stuff drawer of any kind;" "when the drawer has caused the stuff to advance a certain number of stitches," it is caused "to make a back stitch so as to form three superposed stitches; the machine then recommences its ordinary motion," and so on. The "back stitch" may be obtained at will "by means of a lever."

[Printed, 4d. Drawing.]

A.D. 1861, April 25.—N° 1045.

SALISBURY, SILAS COVELL, and STARLEY, JAMES.—"The object of this invention is to adapt sewing machines to produce

" at the will of the attendant either the shuttle stitch or the " double chain stitch." For this purpose a shuttle machine is constructed with the shuttle race " in a line with the bracket arm " that carries the vertical needle and presser," and both the shuttle carriage and vertical needle are operated by slotted rock levers driven by a crank pin working in the slots. To admit of this machine being used for making the double-chain stitch, there is attached to the slotted lever that moves the vertical needle, a hinge piece, which shuts off a portion of the slot and so, changing the action of the crank pin, produces the requisite change of movement of the vertical needle " to suit the operations of the horizontal needle which is to be substituted for " the shuttle." The frame carrying the shuttle race is contrived to receive a guide plate. In this plate works a slide bearing the horizontal needle, and on the under side of the slide is a guide pin " though which the traverse motion is transmitted to the needle." " A rocking finger, mounted at the side of the shuttle race, is " used to hold open the loop of the horizontal needle for the " vertical needle to enter." " The pressing foot is operated by a " spring on a rocking lever mounted on the bracket arm of the " machine."

[Printed, 1s. 4d. Drawings.]

A.D. 1861, April 26.—Nº 1059.

SALISBURY, SILAS COVELL, and STARLEY, JAMES.—The object of this invention is to replace the shuttle in ordinary sewing machines by a " spool case," which shall be capable of holding more thread. This " spool case" is cylindrical, and is fitted with a central tube to hold a good sized bobbin. It traverses like the ordinary shuttle, but it has also an axial motion for the following purpose. The foremost end of the " spool " case" is furnished with a small hook. As the " spool case" advances to the needle-loop, this hook engages with the loop, and as the spool case turns on its axis the loop is opened and entrance facilitated. As the " spool case" advances the loop slips off at the rear, having had the locking thread passed through it by the " spool case." " In order to make what is known as the " knot-stitch, the inclination of the hook on the spool case is " reversed, so that it may take up the slack loop of the vertical " needle by a back instead of a forward motion. The driving

" cam has also to be adjusted, so as to place the hook in advance
" of the vertical needle ready to take its loop."

[Printed, 1s. 2d. Drawings.]

A.D. 1861, May 1.—N° 1083.

SICKELS, JOHN.—(*A communication from W. Cleveland Hicks.*)—This relates to an arrangement or combination of sewing machinery making the shuttle or lock-stitch. "The needle is worked by a lever which is connected by a short link to the needle slide, and is actuated by the usual grooved cylindrical cam." The shuttle is driven by a driver "working between guide surfaces," and actuated by a cam. The "wheel" feed motion "is worked by a friction surface inside the rim of the wheel. The friction surface is actuated by a slotted arm, which is connected with a second slotted lever arm by means of an adjustable screw passing through the slots of the two levers." This screw regulates the length of feed. The fabric is held down by a presser foot, and the tension of the needle thread is obtained by passing it through an eye in a rod which is capable of being turned on its axis, and so winds the thread round it. There is also a lever arm for taking up the slack thread at each rise of the needle. This lever is worked by the needle-slide, and is "retained elevated until the descent of the slide by a pair of nipping springs."

[Printed, 1s. 2d. Drawings.]

A.D. 1861, May 2.—N° 1101. (* *)

CLARK, WILLIAM.—(*A communication from Jean Joseph Germain Marius Arthaud.*)—"Improvements in the imitation of gold and silver embroidery."

The imitation is produced by the employment of wire gauze. A metal web silvered or gilt by means of an electric bath or in other ways "is cut up in pieces for use according to this invention by means of tools employed by artificial flower makers or by means of a cutter or other apparatus. At the same time as I cut out or shape the pieces of metal gauze which are to imitate embroidery, I cut out a similar piece of muslin or gauze paper, lead foil, gilt or silvered paper, cardboard, tinsel, or other similar material. These different materials may be employed either singly or collectively by pasting them together for the

" purpose, 1st, of imparting the proper tint to the artificial embroidery, the colors of which materials are visible through the transparent metal gauze ; 2nd, to impart a relief surface to the designs for closely imitating hand embroidery. The materials thus prepared and ornamented may be applied to fabrics, cardboard, bookbinding, portfolios, carpets, paper hangings, woodwork, and other purposes, by pasting, rivetting, sewing, or otherwise fixing them. For embroidery designed for ornamenting stage dresses it is suitable to add round, oval, or other shaped spangles."

[Printed, 4d. No Drawings.]

A.D. 1861, May 3.—N^o 1116.

WIGHT, ALEXANDER.—(*A communication from James Wilcox.*)—(*Provisional protection only.*).—"Improvements in the manufacture of trimmings." This invention consists in "attaching or sewing an ornamental edging or trimming to the hem or part "turned over" of strips of fabric intended to be made up into ruffles, &c. The same series of stitches serves both to attach the edging or trimming and to secure and perfect the hem. This is done by a machine furnished with a suitable "hemmer" and guiding apparatus.

[Printed, 4d. No Drawings.]

A.D. 1861, May 9.—N^o 1179.

SINGER, ISAAC MERRITT.—"An improved feed motion for sewing machines." The object of this invention is to enable a reciprocating motion to be efficiently given to the feed apparatus in such a manner that the feed may be given at will, "either in the direction of the length of the machine or at right angles thereto," to suit the nature of the work. The feeder is slotted at its inner end to receive a bolt for securing it to the framing, and it is supported from below, "by a slide which has a rebate at its under side and near its outer end. The shoulder of this rebate is chamfered so as to work against an incline on a fixed cross bar. A reciprocating motion is given to the slide by one of a series of cams on the main driving shaft of the machine, whereby the outer end of the slide is elevated as it is forced outward (by reason of its mounting the incline of the cross bar), and thus the feeder is pressed up into contact with the

" fabric. To impart the feed motion to the feeder when it has " thus taken hold of the fabric, a bar sliding in a guide, and " having an incline on its inner face, bears against an incline on " the side of the feeder," and thus imparts a lateral motion. This bar has a hooked projection on its outer end when it is desired to produce a longitudinal motion, and in either case the bar is worked by a cam. "The return motion of the feeder will be " effected by tension springs."

[Printed, 10d. Drawing.]

A.D. 1861, June 6.—N° 1419.

BAILEY, JOHN, and BAILEY, WILLIAM HENRY.—(*Provisional protection only.*)—Speed indicator. It is proposed to indicate the speed of sewing machines, as well as that of other machines, "by " means of a rod attached to the sliding piece of an ordinary " governor, which rising by the action of the governor and slide " piece, indicates on a guage dial placed directly over the governor " the exact speed."

The inventors claim "the use of papier machée, vulcanite, " aluminium and its alloys, in the manufacture of guages and " indicators."

[Printed, 4d. No Drawings.]

A.D. 1861, June 6.—N° 1420. (* *)

COLES, HENRY THOMAS.—"Improvements in mechanism or " apparatus for locks and bolts and other fasteners; gun locks " and gun breeches; catches for weaving shuttles; double screws, " rifles, pistols, other fire-arms, and ordnance; weaving tra- " versers; winders; sewing, weaving, netting, and other " machines; and self-acting claws and grapplers."

One part of this invention consists in the employment of a "double screw" in the following manner. It is mounted in a hollow shaft and arranged so as to act upon turning pieces also connected with the shaft, such turning pieces forming "grapplers" capable of laying hold of a shuttle. This shaft may be applied to a weaving machine, and being made to grasp the shuttle, may then be "passed through the warp instead of the shuttle being " thrown; it thus takes the shuttle through the warp and leaves " it on the opposite side and retreats; the warp is then passed; " the warp being passed it then fetches the shuttle back." The

patentee states that this "applies to sewing, lace, and netting and "other machines in which a shuttle is used; the shuttle is held "by a fixed spring claw on the side opposite the one from which "the hollow shaft is propelled. The grippers turn on centre "pivots, and are arranged to open and shut alternate times by a "cogged wheel, which takes two turns to one of the motions "of advance and retreat. The propelling tubes are moved by "a lever, strap, or other action."

[Printed, 1s. Drawing.]

A.D. 1861, June 14.—N^o 1530.

JOHNSON, ALBERT FRANCIS.—This invention relates to an arrangement of sewing machinery for working with two threads by means of an upper and lower needle. The upper needle is carried in the usual manner at the end of a needle arm, which is curved downwards under the table and is there acted upon by a crank. The under or curved needle is carried at the end of a lever under the table. This lever works by the side of a cam, and is so hinged at its pivot end as to enable it to be constantly pressed, by means of a spring, against the varying face of the cam. Thus the curved needle is made to move laterally and open the loop. Both threads are carried on bobbins above the machine, and the tension is affected by passing the thread between discs pressed together by springs and set screws. The feeder projects through a slot in the table, and is worked by two cams and a spring. One cam advances it, the other elevates it while the spring secures its recession. Arrangement is also made for the controlling of the slack of the lower needle thread.

[Printed, 8d. Drawing.]

A.D. 1861, June 28.—N^o 1649.

GIBSON, JAMES.—(*Provisional protection only.*)—This invention consists "in applying to sewing machines a vessel containing "water or other liquid, either alone or combined with size or "bees' wax in a fluid state, through which the sewing thread is "conveyed in its passage from the bobbin to the needle." The work performed with thread so treated is said to be more durable and it is claimed that the needles last longer than when dry thread is used.

[Printed 4d. No Drawings.]

A.D. 1861, July 2.—Nº 1676.

HELBRONNER-GERSTLE, SOPHIA.—Facilitating the production of embroidery or tapestry. For this purpose the design of the pattern is delineated on the canvas or fabric, and the same pattern is also drawn on paper with numbers corresponding to the colours to be employed. Along one side of the canvas is fixed a strip of paper, provided with the same series of numbers as are inscribed on the design papers, and close to each number is fixed a small sample or tuft of that colour of the coloured worsted or other yarn. Thus the work is rendered merely mechanical.

[Printed, 8d. Drawing.]

A.D. 1861, July 2.—Nº 1681.

BISHOP, HOBERT HENRY.—Actuating the needle bar of sewing machines, so as to cause the needle to feed the cloth as well as sew it. The needle bar is pin-jointed at its upper end to a slide working between fixed guiding surfaces. “To the upper end of “ this slide one end of a connecting rod is attached by a pin “ joint, the other end of such connecting rod being attached to “ a crank or arm formed or fixed on one end of a rocking shaft “ which has its bearings carried by the fixed arm of the sewing “ machine. At the other end of the rocking shaft is another “ crank or arm, which by a connecting rod is connected to a “ crank on the driving shaft.” There is another rocking shaft similarly carried, having an arm at one end. This arm is “ in “ contact with or is otherwise actuated by a suitable cam in such “ a manner as to cause the shaft to rock slightly at the time the “ needle is in the fabric or fabrics, in order that by another arm “ fixed at the other end of the rocking shaft it may cause the “ needle bar and the needle to assume an inclined position in “ regard to the slide.” Thus the work is moved a little each time the needle descends into it.

[Printed, 10d. Drawing.]

A.D. 1861, July 3.—Nº 1696.

GIVRY, VICTOR CHARLES.—(*A communication from Louis Theodore Givry.*)—(*Provisional protection only.*)—The inventor proposes to work the needle by means of a connecting link, attached at one end to the needle bar, and at the other to a crank

disc or wheel. This crank disc has teeth on the edge, and is worked by another toothed wheel on the driving shaft engaging with it. The presser foot is worked by a cam on this disc, while the feed is actuated by a similar cam on the lower wheel. The under needle is worked by a cam through "a jointed arm, or " series of arms, links, or bars." This cam is on an "upright " shaft in gear with the horizontal shaft," and acts "on a friction " roller in a slotted arm guided by studs and brought back by " a spring, there being at the end of the arms a bell-crank lever " arrangement holding a grooved and bent needle which works " at an orifice in the table whereat the upper needle acts, and has " thread led to it through guide eyes from a reel or spindle " pivotted under the table; this arrangement may be applied for " working shuttles, aiding or substituting a box, race, or guide " groove at the place of one of the links."

[Printed, 4d. No Drawings.]

A.D. 1861, July 9.—Nº 1740.

KEATS, JOHN, and KEATS, GEORGE EDWARD.—In this machine "the shuttle is attached to a carrier, and is moved to and fro by causing this carrier to be actuated by a rod connected to " an eccentric or crank pin on the lower end of a vertical shaft." The carrier can be easily removed and one of another size substituted, thus admitting of the use of various sized shuttles. "The " motion of the vertical needle is effected by means of an eccentric or cam on a horizontal shaft, which is driven by the prime mover." The feed is effected "by an eccentric or cam, working " in an open bridle piece attached to or forming part of the propeller arm or lever." By the rotation of this cam or eccentric in the open bridle piece a vibrating motion is communicated to the propeller arm. The arm can also move slightly in a vertical direction, and the feed is regulated by an adjusting screw bearing against the cam or eccentric. By means of another cam, acting on a bar at the back of the propeller arm, the feeding apparatus can be lifted over seams and other uneven surfaces. "A transverse motion may also be communicated to the feeding apparatus by means of a vibrating lever, which turns or works on a centre or stud fixed in the needle box." The tension "is effected by means of a coiled spring, which is made to envelope " or surround a barrel, on which it may be tightened or loosened

" as may be required by means of a screw nut which will depress
" or tighten one end of the spring, and cause the other end to act
" more strongly on the thread lever.

[Printed, 1s. 4d. Drawings.]

A.D. 1861, July 15.—N° 1782.

MABSON, JOHN.—(*Provisional protection only.*)—"The object
" of this invention is to apply to sewing machines certain me-
" chanism, by means of which various articles of apparel or other
" articles may be quilted or braided in a more speedy and even
" manner than is possible to be done by hand." The inventor
says, "I propose attaching to sewing machines a bent arm or
" cloth presser, in which is a hole for the needle to pass through,
" and close to this hole is an opening or loop which serves as a
" guide for the braid. Upon the end of the cloth presser is
" attached a cross piece which can be adjusted by sliding feet to
" any desired width for quilting, and thus acts as a gauge."
" The foot slides travel on the quilting gauge, and are secured
" thereon at the required distance apart by small thumb-screws."

[Printed, 4d. No Drawings.]

A.D. 1861, July 27.—N° 1879.

JOHNSON, JOHN HENRY.—(*A communication from the Grover
and Baker Sewing Machine Company.*)—The improvements claimed
under this patent are three in number; "the first of them is ap-
plicable to machines which make a double-looped stitch by
the use of two threads, the thread appearing on one side of the
cloth, like the thread of a shuttle sewing machine, and there
being on the other side a chain or interlooping of both threads."
The second improvement consists in the combination of tension
apparatus, and the third relates to a "take-up" apparatus.

The first improvement is capable of two sub-divisions, viz.,
certain peculiar motions of the under needle and the mode of pro-
ducing such motions. The lower needle is carried in a stock,
which together "are in shape somewhat like the bill and neck of a
swan, the eye of the needle being near the end of the bill. The
needle lies under the cloth, the stock projects downwards below
it." The needle is capable of movement in six directions, viz.,
backwards and forwards, sideways, and up and down. These move-
ments are given in the following manner. In the lower part of the

neck of the stock is a hole "into which passes a crank pin, projecting from a revolving shaft." In the ordinary way this crank pin would give the needle an upward and downward motion and also a backward and forward movement. But the crank pin is not parallel to its shaft. The pin therefore "describes a cone instead of a cylinder as usual, and it follows that the needle, in addition to its backwards and forwards motions, and to its up-and-down motion, receives also a sideways or oscillatory motion, the extent thereof being determined by the angle of the crank pin and the distance of the needle from the crank." "When the machine is put in motion, the upper needle descends through the goods, rises a little, and forms a loop of its thread; the lower needle being then near its lowest position advances point first and enters this loop on the side of the lever needle, from which the cloth recedes; when it is fed it passes on to its full length through this loop, descending as it advances, but in the meantime the upper needle has ascended to its highest point. As the upper needle descends again, the lower needle retracts, and rises and moves over sideways, owing to the angular position of the crank pin, so that the upper needle descending further enters a loop of lower needle thread; when that lower needle is on that side of the upper one towards which the cloth moves, the lower needle continues to back out and rise, finally casting off the loop of the upper thread that it holds when near the under surface of the cloth. When this loop is cast off, the lower needle descends further, rises a little to form a new loop, and the lower needle descends, advances, and moves sideways again to seize this new loop."

The upper thread first passes between tension plates, then through a slot in a pin or rod. "This rod is surrounded by a light spiral spring called a check spring, which tends always to force the thread towards one end of the rod." It then "passes through two eyes in two small lugs" attached to the needle bar, and thence to the needle. The thread between the two lugs is close to one jaw of a nipper; the other jaw is "below the first one and attached to some stationary part of the machine, and mounted upon a spring, and so arranged that the small surface between the lugs shall strike it before the needle reaches its lowest point of descent, and after the needle eye has passed through the cloth." The thread is thus nipped, "and as the needle continues to descend the thread remains nipped, because

“ the lower jaw is mounted on a spring which presses it upwards, “ but at the same time permits it to descend when forced down “ by the upper surface.” “ As the needle descends the check “ spring expands and takes up the slack that would otherwise “ form between the needle and the cloth. After the needle eye “ passes through the cloth, the thread again compresses the check “ spring, and when the lower needle cuts off its loop of upper “ thread, then the nippers grasp the thread and clamp it, so that it “ can descend no faster than the needle descends. The needle in “ its further descent then of necessity takes thread from the cast- “ off loop, pulling it up to tighten or partially tighten the stitch. “ When the upper needle begins to rise again the nippers will “ grasp thread, and continue to grasp it until a loop is formed “ and seized below the cloth; by this action they prevent the “ check spring from stealing the loop.”

The third improvement, which is chiefly applicable to shuttle machines, enables the needle to form a loop with certainty when it ascends. In carrying out this improvement the thread, after leaving the tension apparatus, passes crosswise of the machine between two eyes. As the needle commences to descend, a fork descends with it. This fork takes the thread, between the eyes, and forces it down, “ thus taking up the slack as fast as it is made “ by the descent of the needle;” when the needle eye reaches the cloth the fork is caused to release the bight, “ thus giving up the “ thread to the needle, which, after its eye has passed through “ the cloth, takes below the cloth twice as much thread as is due “ to its own length of motion.”

[Printed, 1s. 6d. Drawings.]

A.D. 1861, August 8.—N° 1976.

NEWTON, ALFRED VINCENT.—(*A communication from William Cleveland Hicks.*)—This invention is capable of three subdivisions. The first two relate to improvements in the tension apparatus, the third to the feed motion. The object of the former is to provide for a large amount of slack thread to be thrown off to form the loop for the shuttle. In the first arrangement the thread, before it reaches the needle is led through an eye in a crank arm worked from the needle bar through a rack and pinion. By the second method, the thread may be led “ through an inclined slot cut in a bracket piece attached to the vertical needle bar.” This slotted

bracket piece works "in a guide (formed with an inclined face) " on the needle bar guide box, the slot will on the rise of the " needle bar lift the thread, and bring it over the shoulder on " the upper end of the guide of the slotted bracket. On the " descent of the needle bar, the thread to form the slack will still " remain on this shoulder, but when the needle has entered the " cloth to be sewn, the thread, by the wedge-like action of the slot, " will be pushed off its bearing point, and the slack will thus " instantly be made ready for forming the slack loop below the " cloth." The improvement relating to the feed wheel has chiefly for its object the adaptation of the wheel to various thicknesses of work. The wheel is mounted on bearings which admit of its being slightly raised or depressed. This elevation or depression is performed by an arm or lever, the fulcrum of which is an eccentric. The wheel is revolved by means of segment pieces travelling in an annular groove in the face of the wheel. These segment pieces are expanded at the proper moment by means of levers and grip the groove, thus causing the wheel to revolve. One of the segment pieces maintains the wheel in position, and thus obviates the friction of the brake or catch usually employed for this purpose.

[Printed, 1s. 2d. Drawings.]

A.D. 1861, August 8.—N° 1977.

NEWTON, ALFRED VINCENT.—(*A communication from William Cleveland Hicks.*)—"An improvement in single-thread sewing " machines" by which unravelling of the stitches is prevented when from any cause one has given way. This improvement consists in introducing in the line of stitches shorter ones which serve to "retain the loop of the adjacent long stitch that may " have been set free in its own loop." These short stitches are made by altering the motion of the feeding bar whenever the short stitch is to be made by means of a cam which "receives a rotary " motion from the looper shaft."

[Printed, 10d. Drawings.]

A.D. 1861, August 9.—N° 1986.

CHATWIN, HENRY.—Improvements in the manufacture of card needle, pin, and other cases.

The invention consists in making such, and the like description of articles named in the title, of wood or paper maché, "and,

"finishing or covering them with leather, embossed, gilded, or "otherwise ornamented, protected at the parting or separation "with a mounting of bone, ivory, metal, or other suitable "material." The inventor also proposes the insertion of photographic pictures on glass, as panels, but he does not wish to be understood as claiming this.

[Printed, 4d. No Drawings.]

A.D. 1861, August 9.—N° 1987.

NEWTON, ALFRED VINCENT.—(*A communication from Amasa Howe.*)—This invention relates,—

(1.) To the needle bar guide, which is made adjustable by means of a screw and spring, so that the needle, whether it be coarse or fine, can be brought to any required proximity to the shuttle.

(2.) To the use of a small bar or lever, worked by a cam, by means of which the needle is pushed away from the shuttle after forming its loop, so that it is not in danger of being broken.

(3.) To imparting to the presser foot an axial motion so that it may be thrown outward, away from the needle bar, when not in action. This last improvement is effected by a thumb-piece working horizontally in a slot in the guide through which the stem of the presser foot works.

[Printed, 10d. Drawing.]

A.D. 1861, August 16.—N° 2043.

LIVESEY, JOHN.—"Improvements in textile fabrics for embroidery, trimmings, and other ornamental purposes, and machinery employed in making the fabrics into trimmings." The invention consists—

Firstly, "in the manufacture of a new fabric consisting of narrow bands or braids having pile loops worked at different intervals upon them, and so made as to be capable of being easily divided, and worked into curves or other ornamental forms, and when so worked making a new kind of trimming for edgings and other fancy ornaments. The narrow bands are made on lace machinery."

Secondly, in an arrangement of machinery for cutting the pile.

Thirdly, "in arranging machinery in such manner as to bring two or more threads into work to be twisted round each other

" so that at different intervals of the twisting the bands or braids
" herein-before referred to may be placed between these threads
" to hold them in the position required to form different designs.
" These threads may also have wire threads twisted with them
" when required, and needles may be added and used for further
" fixing the pattern of the trimming or design required."

[Printed, 2s. 4d. Drawings.]

A.D. 1861, August 21.—N^o 2086.

SALAMON, NAHUM.—(*A communication from Amasa B. Howe.*)—The first part of this invention consists in a means of making frilling by means of the sewing machine. The desired work is obtained by passing one of the two pieces of cloth through a tension clamp before it comes under the action of the feeder. By this means the two pieces are fed at different rates and thereby the looser of the two is gathered into folds which are sewn to the other piece. The second part relates to a contrivance to be attached to the needle arm, so that at each stroke of the needle bar, a "crease mark" is made upon the material which will indicate the precise line of the next seam to be taken. This apparatus is intended to be used in sewing tucks and folds, but the patent also includes a modification of it for quilting and similar purposes. For this latter work the "creaser" carries a piece of chalk or other similar material which marks the line to be next sewn.

[Printed, 8d. Drawing.]

A.D. 1861, August 28.—N^o 2143.

GUINNESS, WILLIAM STUART.—In constructing shuttle sewing machines the inventor gives motion to the various parts by means of cranks or excentrics, a separate crank or excentric being used for each part and the whole being mounted on the one shaft, thus cams are dispensed with. The needle is attached to an arm projecting from the slide, thus the work does not come under the latter and so escapes danger from the dropping of oil or other lubricating matter. The guides for the slide are parallel rods, passing through holes in it. The needle is placed in a groove in the end of the arm and secured by turning a ferule which surrounds the arm. This ferule, which is kept in its place by a screw, grips the needle between it and the arm. The shuttle has its nose above the centre line and the needle only descends

low enough to allow the nose to enter the loop. The thread passes through an eye in a lever before it reaches the needle. This lever is acted on by a pin in the needle slide so as to allow the thread to be slack when the shuttle is passing, the loop and another pin brings it back again to take up the slack, tighten the stitch, and draw more thread from the reel. The thread also passes between tension discs pressed together by a spring. There is no shuttle race, but the shuttle "lies in a holder, which is "capable of sliding to and fro along a straight bar passing "through a hole in the lower part of the holder." This holder is adjustable and is made of wood to prevent noise. For feeding the material two or more smooth surfaces are employed in place of the roughened surfaces commonly used. The upper one only moves vertically and is constantly pressed down by a spring. The lower one is formed on the upper end of a vertical bar having a slot through it and through which a pin carried by the framing passes. The lower end is worked by a crank, so that the upper end is made to rise and fall and also to move laterally, thus causing the feed.

The inventor also claims the use of two or more needles "at a short distance apart from each other to produce a single row of stitches, the needles being one behind the other in a line with the direction in which the work is moved. The shuttle is passed through the loops thrown out by the needles" from either side as desired. The last improvement named is in the treadle. It is constructed with a ball and socket joint or universal joint on the connecting rod, so that the treadle itself can be turned into various positions, thus enabling the operator to sit elsewhere than immediately in front of the machine.

[Printed, 1s. Drawings.]

A.D. 1861, September 2.—N° 2192.

CAMPION, WILLIAM, and JOHNSON, HENRY.—"Improvements in machinery or apparatus for cutting the selvedges or edges of knitted or other fabrics while being stitched."

The improvements consist in applying to or combining with an ordinary sewing machine, a pair of cutters of suitable construction. By means of these cutters the selvedges or edges of knitted or other fabrics are cut while they are being stitched.

[Printed, 1s. 4d. Drawings.]

A.D. 1861, September 10.—N^o 2257.

SMITH, JAMES.—“Improvements in sewing machines.” The needle is worked by means of an eccentric under the bed of the machine, the rod of which passes up through the said bed and is attached to the needle holder. On this eccentric is a stud which “works in a vertical slot in the frame which carries the shuttle” so that every rotation of the eccentric communicates one forward and one return motion to the shuttle as well as moving the needle. The thread is passed through an eye at one end of one arm of a bell crank lever, the other arm is bent like the letter S. This bent part is acted upon by a pin on the needle holder. Thus the operations of slackening the thread and tightening the stitch are performed. The feed apparatus is worked by cams on the eccentric shaft and bell crank levers. The inventor also passes “through the top leg of the feeder a pin, which pin works in a slot in the frame of the machine so that the friction and wear between the feeder and the frame in which it works shall fall on the said pin, which when worn can easily be replaced.” The nose of the shuttle is in line with the under side and not with the centre as is usual. The shuttle carrier rests on two parallel ledges and is covered in by sliding plates, which are moveable to allow of the carrier being removed.

[Printed, 1s. Drawings.]

A.D. 1861, September 12.—N^o 2262.

BIRKBECK, GEORGE HENRY.—(*A communication from Thomson Hankey Alexander.*)—This invention consists in forming the eyes of needles of wedge shape, or in other words “nearly closing the sides of the eye towards the upper end thereof,” thus the thread is securely retained and prevented from slipping while the needle is in use.

[Printed, 6d. Drawing.]

A.D. 1861, September 24.—N^o 2385.

COTTRILL, JAMES.—This invention has reference to certain kinds of needles, such as are used for sail and sack making and glove stitching, &c., and the improvement consists “in making such needles square, or four-sided in section, or with five or more sides and angles, except at the head which will be of the usual form.”

[Printed, 4d. No Drawings.]

A.D. 1861, September 28.—N° 2423.

WILSON, WILLIAM NEWTON.—This invention comprises the following parts :—

(1.) "The combination of a looper with a stationary shuttle or " spool case. To one extremity of the axis of the looper is fixed " a worm, which is driven by another worm fixed upon the axis " of the driving shaft of the machine. The worm or the driving " shaft is so constructed as to perform the double function of " carrying the looper forward and reversing its action. When the " needle has pierced the cloth, the looper takes the loop and " carries it over the point of a stationary spool case, containing " a reel, and formed so as to open the loop, which is then drawn " tight by the needle bar acting in combination with two fixed " guides." A break applied to the wheel prevents any backward motion.

(2.) An improvement in "machines used in hosiery," which consists "in substituting a small tube through which the needle " shall operate for the ordinary pointed wire at present in use, " and on which the fabric is hung while being stitched, and by " which means" the patentee is enabled "to lay the sewing on " the edge of the fabric."

(3.) An application to "machines using a circular needle for " looping," of "a small pillar resting up on a spring fixed in a " tube or socket connected with the fixed arm of the machine. " By a suitable fixing on the needle arm of the machine, the " thread is pressed upon the top of the pillar and held there till " the loop is completely formed." This contrivance is a substitute for the ordinary nipper springs.

(4.) This in part applies to shuttles machines also. The feed motion as described.—"The left extremity of the cam shaft forms " a compound eccentric, one part of which propels and the other " raises the feed lever, which is in form similar to a three-pronged " fork, the two outer prongs sliding into bearings as the butt end " is operated on by the eccentric, while the centre prong in a " divergent line passes through a spring which is compressed in " the forward motion, and in its reaction gives the backward " motion to the feed lever." "The length of the stitch is " regulated by a small eccentric lever, against which the butt of " the feed lever presses at its backward movement." The shuttle is segmental and corresponds exactly with the curve of the race.

(5.) Arranging the feed mechanism "so that the feed shall at pleasure be made to act in any direction to the extent of one complete half circle."

(6.) An improved binder, "the principal feature of which consists in fixing the clips to the body of the binder, while the back is made in one separate piece to slide up to the work within the clips, so as to lay the binding tight upon the fabric, whatever the width of binding used."

(7.) Driving machines by "rotary motion" instead of by the ordinary crank movement. "Attached to one end of the driving shaft instead of a crank is a small smooth-faced wheel; on each side of this wheel, moveably connected with the shaft, is a bridle, having its further end extended above the wheel sufficiently to support between them a small cam, "one side of which is attached to the connecting rod. By the downward pressure of the treadle this cam is made to impinge on the periphery of the small wheel and produce a rotary motion."

[Printed, 1s. Drawing.]

A.D. 1861, November 9.—N^o 2814. (* *)

McNAIR, ROBERT.—"Improvements in casings for stitching machines, and in adapting the same for writing." The casing is fashioned by preference "like what is commonly known as a Davenport or lady's writing table," and the improvements apply "to the parts forming the sides of the table or stand and the top cover for enclosing the machine when out of use." The desk portion "is contrived either to lift completely away from the stand or to slide forward." In the former arrangement "double doors are formed at the front of the stand, and the front or ornamental legs are attached to them so as to swing round with them." In the latter there is fixed at each side of the stand top, near the front edge, "a headed staple," which enters a recessed groove in the under side of the desk, and "metal strips," screwed to the edges of the groove and "cut away at one part to allow the desk to be entirely removed or replaced," catch under the head of the staple. In the desk is accommodation for writing materials, "there being an otherwise unoccupied space for papers immediately beneath the inclined lid, whilst further back there are two sets of small drawers, one set at each side." The space between the sets "serves to cover and enclose the stitching details

" and is inaccessible from the inside of the desk," but, when the desk is moved back, "a door at the back closes the opening, and " the stitching details are by it entirely enclosed." A door, which gives convenient access to the treadle, "is fitted to the " back of the stand."

[Printed, 2d. Drawing.]

A.D. 1861, November 11.—Nº 2833.

CROSBY, CHAUNCY ORRIN.—"Manufacture of pointed trimming." By means of the improved machinery for this purpose the braid or other similar material is fed through a suitable delivery apparatus, to a folder which plaits it into pointed trimming. The folds are then fed on to sewing machinery, which throws a row of stitches into the work to secure the folds in place.

[Printed, 2s. Drawings.]

A.D. 1861, November 25.—Nº 2958.

WILLCOX, JAMES.—(*A communication from Charles Henry Willcox.*)—"Improvements in sewing machines, and in apparatus " connected therewith."

(1.) "The employment of a loop retainer or tension" let off "in connection with a revolving hook or looper," the object of which is to "hold and control the loop until it is drawn up by " the action of the hook or needle or both." This "let off" or retainer "is formed by a swell or projection on the back of the " hook, extending from the nose of the hook for about a quarter " of a circle in the rear of its path," and ending in a hook which serves to hold the old loop.

(2.) The use of "a stop or stationary hook" in combination with the revolving hook and eye pointed needle, for the purpose of turning or twisting the loop formed by the descent of the needle, "in such a manner as to interlock the thread from the " lower spool."

(3.) The application of leather or such material for deadening the sound of the working parts.

(4.) A tension apparatus, consisting of two discs of glass or metal, moving on a spindle, one of which is made to approach and recede from the other, at proper intervals, by means of a lever and cam. Thus the thread is nipped at certain points of the movement of the needle and is free at other times.

(5.) Making the needle hole of a separate piece of metal "of such a shape as to admit of the feed surface acting simultaneously upon all four sides of the needle hole, whereby a more regular and perfect feed of the material is insured." This needle hole is fixed under the table by a screw, and in some cases may be made to ensure the "proper presentation of the loop to the looper."

(6.) A device for driving sewing machines, consisting of two collars secured on the driving shaft. "One face of each collar is recessed, so as to have a projecting rim or flange, inside of which fits a circular piece with a lever arm or crank attached thereto, and having one or more notches or inclines cut in its periphery, in each of which is placed a roller, which is made to wedge between the inner surface of the rim of flange and the inclined surface of the notch by the action of a spring." By moving the levers through the treadle, in one direction, the rollers will become wedged, and so rotate the collars; on reversing the action of the levers, "the circular piece will turn back freely, and the rollers will take a fresh hold on the rims of the collars," and so on.

(7.) Attaching a "check plate" and pin to the under sides of hemmers, &c. The pin "enters a hole in the cloth plate of the sewing machine, by which simple contrivance the hemmer or feller can always be placed in its correct position," whilst by it it is also secured in its place.

[Printed, 1s. Drawings.]

A.D. 1861, November 26.—N^o 2970.

SELLERS, WILLIAM.—(*Letters Patent void for want of Final Specification.*)—This improvement relates to shuttle machines and consists in "operating the needle by its cam or tappet, so that when the shuttle enters the thread on the needle, the needle may have a slight back motion given to it sufficient to admit of the shuttle passing through without drawing off more thread than required for the passage of the shuttle."

[Printed, 4d. No Drawings.]

A.D. 1861, December 3.—N^o 3028.

GLEW, JOHN HENRY.—(*Letters Patent void for want of Final Specification.*)—This invention consists in the use of two shuttles

instead of one; thus two needles can also be used and "consequently produce an increased amount of work at the one operation."

[Printed, 4d. No Drawings.]

A.D. 1861, December 20.—N° 3190.

EVANS, ORMROD COFFEEN.—The whole of the motions necessary for driving the various parts of this sewing machine are derived from one shaft, which runs from front to rear of the machine. The shuttle or spool is placed a little below and in front of the front end of this shaft, and is loosely held in position by an open-sided box. Near this end of the shaft and revolving round it is a flat plate of metal with a slot in it, which slot is parallel with the shaft. A bar with a hook at one end travels backward and forward in this slot, the motion being derived by a pin on the bar working in a groove in a fixed cam round the shaft. In fact this fixed cam forms one of the bearings of the shaft. The loop from the needle is seized by this hook and drawn by it over the spool or shuttle. The drawing up of the top thread is performed by means of means of a lever, worked by a cam on the main shaft. One end of this lever is formed in order to spring or yield so as not to break the thread. The feeding can be done at any angle "within the quarter of the circle." The feed-bar is worked through a horizontal curved rack, and the portion of the table is capable of being turned so as to bring the slot at the desired angle. The presser foot is also adjustable to meet the requirements of the feed motion. To avoid the stick of waxed thread it is passed over rollers where the greatest friction occurs.

[Printed, 10d. Drawing.]

A.D. 1861, December 21.—N° 3204.

WAKEFIELD, JOHN.—(*Provisional protection only.*)—An improvement "in the mode of regulating the movements of the needle in relation to the shuttle." "For this purpose, the crank pin on the driving shaft is made to work in a slot in an oscillating rod connected by a link with the ordinary rocking shaft, which acts on the needle bar." By these means a slow motion is given to the needle in passing through the material, then it is raised slightly to form a loop, then it rests while the

shuttle is passing the loop, and lastly it is drawn up to take up the stitch. The pivot on which the rod oscillates is adjustable so as to enable the movements of the needle to be accurately adjusted.

[Printed, 4d. No Drawings.]

A.D. 1861, December 31.—N° 3269.

BAILEY, WILLIAM HENRY.—The first part of this invention relates to a binder, and consists in “so forming one or both sides of the binder that their distances apart may be varied to suit any width of binding by an interposed wedge.” The remainder of the patent chiefly relates to a method of indicating the tensions of different parts of the machine. For instance, the tension required to be given to the braid in binding is indicated by passing it between two pins and against a stud carrying a pointer. The friction of the material thus works the pointer. Similarly, or nearly so, the tension of the thread may be ascertained. The speed of the machine is also indicated. It is regulated by the amount of friction put on the fly wheel, which friction is increased or diminished by sliding a weight, which rests on the brake, further from or nearer to the fulcrum of this brake. The weight is moved by a lever, and to this lever the indicator is attached. A pointer can be attached to the part supporting the needle slide so that, after previously setting it to some desired figure on the scale, it will indicate the line to be stitched in quilting. There is also described a mode of regulating the stitch by altering the throw of the feeding foot. “This has hitherto been accomplished by making that part of the foot lever acting on the cam adjustable; the present improvement consists in making the cam adjustable instead.”

[Printed, 1s. 8d. Drawings.]

1862.

A.D. 1862, January 25.—N° 198.

CURLEY, EDWIN AUGUSTUS.—The first part of this Invention relates to the means employed in making an “elastic diagonal “stitch.” The machine used may be either a shuttle or loop

stitch machine and by modifying the feed motion, or the motion of the needle "the stitches may be caused to incline alternately " to the right and left of the general line of the seam to any " required extent." A seam so sewn is said to be more elastic, and the fabric is not so much weakened as if the needle punctures were all in the same line. "One means of attaining the result is " by a lever having a roughened foot at one end for moving the " cloth, while the other end bears against both the face and the " periphery of the wheel, which has on its periphery an adjustable " projection corresponding to a similar projection on its face, " which two projections working against this end of the lever " cause the opposite or feed end to move forward with an inclina- " tion to one side, and then after its return to its original position " a corresponding contrivance on the wheel causes it to move " forward with an inclination to the other side."

The second part relates to a method of "uniting two selvages, " on the edges of two pieces of material" by means of the same stitch. Attached to the feeding apparatus is a long knife edge "to run between the selvages, and thus serve to guide the two " pieces of cloth;" then feeding cloth in the manner above described the half stitches are caused to be taken alternately on each side of the knife edge. A modification of this part constitutes the third section; and this relates to the sewing on of cord by this stitch. The cord is payed out through a guide in the feed motion and secured to the fabric by alternate half stitches on opposite sides of the cord.

The fourth clause provides that the guides for "lapping, folding, and hemming" shall be attached to the feed motion, "because with the elastic stitch they would have a tendency to interfere with the proper feeding of the cloth if they were fixed " as usual."

"The fifth part of this Invention relates to a modification of "the first part, so that after every alternate step of the feed, the "needle goes down outside the edge of the cloth remaining to "receive in the loop of its thread two throws of the shuttle to "produce a sort of button-hole stitch or edge finish."

The sixth part relates to the feeding of the material "from "above and from beneath the cloth at the same time."

By the seventh part the work may be turned "in any required "direction by means of the apparatus for feeding. For this "purpose the feeding contrivances may be made to turn on an

" axis perpendicular to the fabric, and in a line with the point
" where the needle enters."

[Printed, 2s. Drawings.]

A.D. 1862, February 5.—N° 306. (* *)

CAMPION, WILLIAM, and JOHNSON, HENRY.—(*Provisional protection only.*)—" Improvements in machinery or apparatus for
" making the welts of hose or other articles made of looped or
" knitted fabrics."

This invention consists "in making the welts of hose or other
" articles made of looped or knitted fabrics by the employment of
" a hook and needle and cylinder, each of suitable construction,
" and operated upon by a cam and worm and by a wheel. The
" needle employed herein works inside the cylinder instead of
" outside thereof, as heretofore. The fabric of which the welt is
" intended to be made is placed on the cylinder, and upon this
" cylinder is secured a notch or pin, which comes in contact with
" a lever on each revolution, in order temporarily to stop the
" machine; the lever is again applied when another revolution is
" performed."

[Printed, 4d. No Drawings.]

A.D. 1862, February 7.—N° 327.

McKENZIE, ALEXANDER, and PANTHEL, FRANCIS.—The object of this invention is to provide a machine, so arranged
" that by a simple mechanical movement the sewing may be put
" in the fabric in lines at right angles to each other" without
requiring the fabric to be turned round. "The machine is also
" arranged to sew articles of a tubular kind." The shuttle and
feed levers are contained in a projecting tube under the needle.
The shuttle is driven by a cam and "the compound movements
" imparted to the feed plate (which is of the ordinary kind) are
" obtained from the cams on the driving shaft." The first cam
elevates and depresses the feeder, the second moves it laterally
across the tube, and the third serves to move it at right angles to
the last or in line with the tube. Each of these movements is
governed by springs, acted on by milled-headed screws. "The
" laterally projecting tube is covered, by a secondary tube or
" cylinder which extends as far as the feed plate, where it is
" notched or recessed in two places to admit of the motion of the

" feed plate either laterally or at right angles thereto." These recesses are opposite each other and the tube is turned half round " when a change in the direction of the sewing is required " and there held by a spring catch. " The presser is carried in a brass frame piece the inner part of which at each end encircles a projecting part of the frame in which the needle carrier traverses." " A forked guide for supporting the needle is fixed to the under side of the spring presser frame which traverses round with the pressure when its position is altered." A wheel form of pressure is also described, with which is combined a needle guide. By communicating a reciprocating movement to the feed apparatus the material can be fed in a zig-zag direction and so cause a corresponding style of sewing. The length of stitch is regulated by a screw, acting on the feed plate.

[Printed, 1s. 6d. Drawings.]

A.D. 1862, February 12.—N° 368.

COLTMAN, THOMAS.—The object of this invention is to make a stitch which shall be elastic and at the same time shall not be liable to be drawn out. To effect this, two needles, working in guides at an angle to each other, are mounted, one above and the other below the cloth. These needles pass their points up and down through the cloth alternately, " and in so doing the upper needle, for instance, when drawn back will leave a loop, through which the lower needle will pass. This latter in returning also leaves a loop, through which the upper needle in its turn will pass and so on." The feeding is performed by " toothed rings or roughened annular surfaces," and the needles are arranged to work between them so that these rings " bear on each side of the seam and kept the work straight and steady."

[Printed, 1s. 2d. Drawings.]

A.D. 1862, February 14.—N° 399.

McFARLANE, THOMAS DUNCAN.—A contrivance for sewing on edgings or bindings, or " such as are technically termed ' tape ' to collars, &c. It is applied by preference to machines in which the material " is fed forward by means of a pressing foot " acting upon the upper surface thereof." " If the ' tape ' strip " is to be applied as an edging or binding, a duplex guide is fixed " to the machine, consisting of a small wedge, which opens the

" fold of the 'tape' strip to admit the edge of the collar or other article, and an angularly grooved guide piece, along which the partly opened 'tape' strip runs, and which terminates very near the needle. The parts of this duplex guide and the guide pulleys, which conduct the 'tape' strip off its containing bobbin to the guide, are so arranged that the 'tape' strip approaches the line of the feeding action along a curve, which facilitates the proper and even placing of the edge of the collar or other article within the folding 'tape' strip." "The toes or points of the feeding foot" are cut off, close by the needle. "If the 'tape' strip is to be applied in one or more rows upon the surface of the article, a narrow presser" close to the back of the feeder, holds down the 'tape' strip. This presser can be raised by a small handle in turning sharp corners. A gauge is also used, if necessary, to assist in laying the strips accurately.

[Printed, 8d. Drawing.]

A.D. 1862, February 19.—N° 448.

WILLCOX, JAMES.—(*A communication from Chauncey Orrin Crosby.*)—An arrangement for making ruffles, or frills single or double or otherwise ornamental, by means of the sewing machine. Upon the surface of the fabric and in front of the presser foot the points of which are turned up, is "a reciprocating knife having a straight or serrated edge, and provided with suitable notches on its edge for the passage of the needle or needles." This knife is "held down upon the fabric by a yielding pressure, such pressure being removed during the backward stroke of the knife. The forward stroke causes the fabric to be raised in the form of a fold, which fold is turned down over the edge of the knife by being pressed under the bevelled edge of the presser foot. The needle or needles now descend and secure the fold so made The feed motion" (which "is by preference the" four-motion feed slightly "modified in shape, so as to enable it to act upon the entire width of the fabric") "next comes into operation so as to move the entire fabric along in readiness for the next stitch, the crimping knife moving simultaneously in the same direction." The edges of the knife are cut away or bevelled to allow for the seams or selvages in the fabric, and the outer edges of the presser foot are also made elastic for the same purpose. "Where two fabrics are used the

" one intended to form the plain band is passed over the knife
" and under the presser foot."

[Printed, 10d. Drawing.]

A.D. 1862, March 4.—N° 593.

GREENWOOD, THOMAS.—(*Provisional protection only.*)—This invention relates—

(1.) To an improved form of shuttle driver.

" In the extremity of the vibrating arm which communicates motion to the shuttle a socket is made to receive a pin, which is jointed to and projects laterally from the shuttle driver; by this means, therefore, the vibrating arm and shuttle driver are connected together by a kind of loose universal joint. The driver is formed with two projections, which serve to embrace the shuttle. One of these projections is forked, and embraces the nose of the shuttle, and the other bears against the rear end thereof, and the shuttle, although effectually secured by the driver, will move freely backward and forward in its race."

(2.) To an "arrangement for regulating the pressure of the presser foot."

Instead of attaching the tension spring, which gives the downward pressure to the presser foot, to a fixed point on the face of the guide box, "a lever arm is mounted for holding one end of the tension spring. Bearing upon the outer end of this arm is a regulating screw, which is tapped into a lug attached to the guide box. By turning, therefore, this regulating screw, the lever arm may be readily caused to increase or diminish the tension of the spring."

[Printed, 4d. No Drawings.]

A.D. 1862, March 13.—N° 685.

ERMEN, GODFREY.—Case for spooled cotton, silk, &c. The inventor employs a case subdivided into compartments, each serving to hold a separate ball or bobbin, such case being closed by a cover. The improvement consists "in the interpolation of an inner lid between the top of the partitions and the outer lid, such inner lid having perforations or slits therein for the passage of the thread or tape, and consequently corresponding in number to the number of compartments, so that the inner perforated lid closes the compartments, and the threads project through

“ the perforations, and when not in use the outer cover is placed “ on, and such ends are protected from withdrawal, or the per- “ forations may be made in the outer cover, and the inner cover “ dispensed with, or, if preferred, the threads may pass out of the “ sides of the case.”

[Printed, 8d. Drawing.]

A.D. 1862, March 17.—N° 738.

BOUSFIELD, GEORGE TOMLINSON.—(*A communication from Turner Williams.*)—“ Improvements in cranks for driving sewing “ machines, &c.”

This invention is intended to obviate the two disadvantages attached to ordinary cranks, namely, liability to turn in the wrong direction, and liability to stop at the “dead-centres.” “ It con- “ sists in attaching the connecting rod of the treadle to two “ auxiliary pins, which are attached to and vibrate upon the “ crank pin instead of attaching the connecting rod directly to “ the crank pin, and in connecting and disconnecting the said “ auxiliary pins alternately with and from the crank pin at the “ beginning of each stroke, in such a manner that the advance “ auxiliary pin (considering the direction in which the crank is to “ turn) shall become temporarily fixed with respect to the crank “ pin, and perform the usual function of a crank pin, while by “ the same movement the rear auxiliary pin is loosened and “ permitted to turn freely upon the crank pin.”

[Printed, 1s. 6d. Drawings.]

A.D. 1862, March 18.—N° 748.

MENNONS, MARC ANTOINE FRANÇOIS.—(*A communication from Jules Fouquet.*)—(*Provisional protection only.*)—“ Apparatus “ for threading needles.” This apparatus consists of a rod of brass or some other suitable substance, slit lengthways from top nearly to the bottom, the sides being hollowed out to give elasticity to the branches. An orifice is drilled transversely through the rod and in the same plane with the longitudinal slit. This orifice is conically shaped or trumpet-mouthing at one end. From this point upwards a hole is bored along the axis of the rod to admit the needle. A piece of watch spring ensures that two halves of the rod shall always be parallel. The needle to be threaded is passed down the last-named hole along the cleft, until its eye

appears in line with the trumpet-mouthed transverse aperture. This done the thread is passed into the conical aperture, and on rising at the other side is pulled through by the fingers. The needle is then withdrawn, thread and all, the slit giving way to its passage.

[Printed, 6d. Drawing.]

A.D. 1862, March 18.—N°. 761.

BUCK, JOHN TURNER.—(*Provisional protection only.*)—This invention "consists in constructing and fitting up cases or ladies' "companions." The inventor takes a "wedge-shaped case, "similar to those now used as scissor cases," and fits therein "compartments for containing behind each other pairs of scissors "of different sizes." He then inserts "a wedge-shaped slide "behind the scissor compartment for carrying a knife, eyelet "pincer, nail trimmer," &c. This slide may be variously modified. At the back, again, of these articles is inserted a "wedge-shaped "folded thread and needle carrier," and on the inside of the flap is fitted a thimble carrier, pincushion, and needle cases.

[Printed, 4d. No Drawings.]

A.D. 1862, March 19.—N° 764.

DESBOROUGH, SPENDLOVE.—(*Provisional protection only.*)—**Needles.**—One of the improvements herein named consists in forming needles with an additional eye or eyes "through which "the sewing thread is passed after passing through the ordinary "eye;" thus the needle is not so liable to become unthreaded. Such needles may also be used to sew with several coloured threads at one time. The second improvement effects the same object by means of a "slit or opening at the back of the ordinary "eye, into which the thread may be readily drawn" and so held.

[Printed, 4d. No Drawings.]

A.D. 1862, March 19.—N° 768.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Rosalie Clémentine Tillard.*)—"Improvements in reproducing or "in producing copies of Guipure lace, embroidery, and other like "articles."

Supposing it is desired to reproduce a piece of lace, it is soaked in some fatty liquid capable of resisting acids. It is then laid on a zinc plate and the unprotected part eaten away by acid. This is "the direct transfer." The "indirect transfer" is effected as follows:—Some smoother surface is coated with a composition of resinous, fatty, and alkaline bodies and liquid nitrate of silver. The lace is laid on this and over it a sheet of paper. The whole is pressed, and afterwards the lace is taken off, which carries with it some of the composition. Then take paper, by preference unsized, but previously coated on one side with some agglutinant. When this agglutinant is dry, the lace is placed upon it with the side on which it has the composition downwards. The composition will thus be transferred to the paper. The impression is then transferred to a zinc plate, and afterwards the plate is etched. "If a negative reproduction be desired, it is necessary before the first pressure to place the agglutinized paper between the lace and the cloth or felt, and to submit this paper to all the operation" before described for obtaining the positive reproduction of the design.

[Printed, 4d. No Drawings.]

A.D. 1862, March 19.—N^o 772.

TODD, GEORGE MEEK.—(*Provisional protection only.*)—This invention consists in forming the "tie-knot stitch" "by passing the shuttle with its thread over the slack of its own thread, after it has passed the loop formed by the needle thread, and then giving both threads the proper degree of pull in different directions." The inventor provides suitable mechanism under the shuttle race for placing and holding the slack of the shuttle thread, and also a contrivance inside the shuttle "in the form of a squirrel cage" to obviate the twisting of the shuttle thread that might arise.

[Printed, 4d. No Drawings.]

A.D. 1862, March 21.—N^o 792.

CLARK, WILLIAM.—(*A communication from Charles Rhodes Goodwin.*)—(*Provisional protection only.*)—The first part of this invention relates to a method of communicating rotary motion to sewing machines. "For this purpose two discs placed upon the fly shaft receive from the treadle an alternate circular motion

" from right to left and from left to right. This motion is caused by cords attached to brackets on the connecting rod and passed in contrary directions round the peripheries of the discs. The discs have pawls which act on ratchets on a sleeve on the shaft and so communicate their motion to it. The second part refers to an improvement in connecting the cloth presser and needle arm in such a manner that the former is raised "at the moment when "the loop made by the vertical needle has been taken up" by the hook or shuttle, "before the rough surface feed begins to act, "thus allowing the work to turn freely upon the needle as a "pivot." The cloth presser drops in proper time so that the feed may operate at the right moment.

[Printed, 8d. Drawing.]

A.D. 1862, March 24.—N° 818.

MENNONS, MARC ANTOINE FRANÇOIS.—(*A communication from Paul Nicolas Legris.*)—An improved embroidering machine. In this machine the tissue to be embroidered is stationary and the needles move underneath it. The apparatus carrying the needles is fixed at the end of projecting framework, and the motion is conveyed to this apparatus from the fly wheel by means of a band. Under this needle apparatus is a table carrying the pattern and the said needle apparatus travels over it on a small castor, acted on at will by a little steering lever. The needles, two in number, are mounted in carriers on a frame at an inclination to one another so that they cross one another after passing the fabric, and so take one another's loops. These needle carriers are worked in two ways, either by moving them round a stationary cam having a helical groove on it, into which studs on these carriers work, or by moving the cam itself. In either case the needles progress by their own movement through the fabric; in the first case "by lateral oscillations, giving rise to a zig-zag or serrated stitch;" in the second, "by alternate and successive semi-revolutions, resulting in the production of a fast chain or crotchet stitch." "The retreat or withdrawal of the passive thread is effected by the alternate back pull of the bobbins produced by the friction of their tension nuts. These bobbins being placed end to end on the same spindle and revolving in opposite directions to each other, it is evident that when the right hand needle takes the thread of the corresponding bobbin, the latter in exerting a

" strain on its fellow must stretch the thread of the left hand needle and thus aid the closing on the loop of the stitch formed by it." The needles are "grooved at both sides and threaded at foot and point." The degree of elevation of a "lunette," which bears upwards against the tissue, "determines the degree of separation of the needles on their passage into the tissue, and consequently the length of the stitch produced." The revolution of the castor foot is effected through pinions by the same power which works the needles.

[Printed, 1s. Drawing.]

A.D. 1862, March 31.—N° 901.

CLEMENTS, JAMES MOORE.—This machine chiefly applies to button-hole sewing. By elevating the shuttle "during the time of its passing through the loops, and bringing it back through an irregular curve below for repeating its former motion," the shuttle is moved while the levers are taking up the loops previous to the shuttle again passing through them. Self-acting levers are introduced for holding the loops for the passage of the shuttle. A "purl" will be formed on each side of the work done in this machine, but when it is only required to be shown on one side, the shuttle is dispensed with and a double pointed needle used. A double feed motion is used to prevent puckering, and the material is held in a self-acting clip or travelling guide. In operation the needle takes the thread down through the work and at its partial return forms a loop. This loop is taken by a lever and moved slightly to the right. A barbed hook now passes upward through the loop and divides cloth and takes hold of the needle thread, hanging on a thread lever, and returns with it. The thread lever is now released, the needle being out of the cloth and stationary. The thread lever "is immediately brought to its former position" by a second movement, carrying with it the thread. The second barbed hook is now elevated and carries down a loop parallel with the first, the thread lever at the same time releasing the thread. The two hooks move slightly upwards and open the loops for the shuttle. After the passage of the shuttle, a small hook liberates the loops from the barbed hooks, the first looping lever returns to its place and releases the thread it held, a sudden movement of the needle slide takes place, and the loops are tightened up, while at the same time fresh thread is drawn from the reel.

A modification of this machine is also described. It differs from the first in some details, such as the movement of the shuttle, and the use of one barbed hook instead of two.

[Printed, 1s. 6d. Drawings.]

A.D. 1862, April 4.—N° 957.

LINDLEY, LEONARD, and TAYLOR, FREDERICK.—The improvements comprised in this specification "relate to machines " using one, two, or more threads for uniting fabrics, or for em- " broidering or for sewing over the edges of fabrics."

To effect their object, the inventors make use of two needles " on one side of the fabric," one being an ordinary eye-pointed needle, the other a crochet needle. The distance between these needles is adjustable according to the width of the stitch or edging required. With these needles is also used a hook, working on the other side of the fabric, the duty of which is to take the loop from the eye-pointed needle and place it over the head of the crochet needle, "by which, as the needle ascends, it is drawn up to the " fabric." "A presser acting upon the loop needle (at the proper " time) causes the loop to pass over the beard, and a guide bar " attached to one of the main shafts traverses a separate thread " or the thread from the needle in front of the two needles, which " step over this traversing thread at each stitch, thus forming an " edging or over stitch suitable for edging." "To make the " edging with one thread" the guide bar above-mentioned is re- moved, and a "bar and hook" substituted. When the eye- pointed needle is up, and while the lower portion of its thread is held by the crochet needle, this hook "takes the upper portion of " the thread which is between needle and the fabric, and draws " it to the right, and at the same time spreads the loop, so that " the crochet needle in descending passes through this loop on " the hook and holds it out across the fabric. The hook then " moves forward" or towards the eye-pointed needle, "and dis- " engages itself from the loop. The drawing up of the under " thread secures or tightens the stitch; both sides of the edging " are nearly alike."

To make the lock stitch, the crochet needle and the under hook are removed, and to the under shaft is adapted an arrangement of rotating hook and stationary bobbin. This hook carries the thread round the bobbin. By means of the apparatus described

in the specification, "the upper thread is drawn straight or nearly
 " straight down from the needle, instead of sideways and down-
 " wards as in the machines in common use, in which the hook or
 " its carriage has a rotary motion."

[Printed, 8d. Drawing.]

A.D. 1862, April 4.—Nº 964.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Théophile Denis Gustave Baudouin.*)—"An improved case for holding balls and reels of cotton, silk, and other threads."

"The case is formed of metal, ebonite, gutta-percha, or other suitable material, and with two compartments, each of which is provided with a cover, and kept separate by one division plate or bottom, common to both compartments. Each cover has a hole formed in it for the passage of the thread from the ball or reel, and there is also a notch in which the thread is engaged to prevent it running back inside the case. Each compartment is made sufficiently large to contain one ball or reel of thread."

• [Printed, 8d. Drawing.]

A.D. 1862, April 16.—Nº 1113.

FORD, JOHN WILLIAM.—(*A communication from Gordon McKay and Robert Henry Mathies.*)—"This invention relates to improvements on the sewing mechanism patented by Lyman Reed Blake, on the 3rd day of May 1859 (Nº 1111)," though it is applicable in some of its parts to other sewing mechanisms."

The following points are claimed:—

1. So arranging the projecting bed or horn which encases the looper, that the said horn "can be rotated with the stock upon it in reference to the needle and feeder, when it is desired to have the seam conform to curves or angles instead of turning the stock upon the horn, or of turning the needle and feeder with reference to the horn. Also combining with the rotating horn, so as to rotate with it the thread, spool, or bobbin, and also the tension device."
2. "Combining a rotatory whirl or looper with a rotating horn" so that "rotation of the horn shall not rotate the whirl though supported by and held in the horn."
3. "Adjusting or varying the lengths of the loops drawn by the needle from the spool, so as to conform to varying thick-

" nesses of stock, by automatically adjusting or varying the stroke
" of the needle by the thickness of the stock at or near the point
" where the needle is operating."

4. " So operating the presser foot as to lift it to a fixed amount
" from the surface of the stock, no matter what its thickness, to
" relieve the thread from pinch between the bed and the under
" surface of the stock while the thread is drawing through the
" stock."

5. " So combining the presser foot with the needle and the
" parts connected therewith, that the resistance offered to the
" upward movement of the needle reacts upon the presser to pre-
" vent it from being forced upward from the needle, the presser
" being prevented from downward motion substantially as
" shewn."

6. " So combining the closing slide of the needle and the
" needle, that the stroke of the slide shall be increased or
" diminished automatically as the stroke of the needle is increased
" or diminished." And also (7) "that said slide is so placed as
" to cover the eye or hook of the needle while emerging from the
" stock, and to move with the needle, keeping its eye or hook
" covered till at or near the termination of the upward stroke
" of the needle, when the slide moves relatively to the needle
" uncovering its eye, and then by moving downward with the
" needle keeps its eye uncovered till the needle punctures the
" stock."

8. " The arrangement of the presser and feeder directly in front
" of the hook of the needle in proximity to the needle in the plane
" of the vibrations of the feeder, and above the stock to be sewed,
" so as to operate on the upper surface thereof."

9. " Combining the feeder and presser that they can be lifted
" together."

10. " Controlling the extent of the feeding action of the feeder
" by making the presser adjustable toward and from the needle,
" and by constructing the presser with an inclined surface next
" the feeder."

11. Combining with the needle bar "a lever which reciprocates
" said bar when its fulcrum is so arranged as to be made moveable
" for the purpose of changing the throw of said bar."

12. Varying the stroke of the needle by means of "a stop made
" adjustable on the fulcrum bar to vary the distance between said
" stop and the fulcrum."

13. The arrangement and combination of a spring "with the parts connected with the needle lever, so as to counterbalance the weight of said parts, so as to retain the needle at its up stroke."

[Printed, 8s. 6d. Drawings.]

A.D. 1862, April 17.—N^o 1124.

BOUSFIELD, GEORGE TOMLINSON.—(*A communication from William Grover.*)—The improvements described in this specification relate to two classes of machines, viz., (1) shuttle machines in which an eye-pointed needle is used in combination with a shuttle, and (2) "double-thread loop stitch machines in which two threads are interlocked by the joint agency of an eye-pointed needle and an eye-pointed thread carrier" or looper.

In the first part the points claimed are, first, the means of working the needle by means of a slotted arm at the end of a rocking shaft into which slot a pin on the needle stock works; secondly, the arrangement at the other end of the same rocking shaft, consisting of "a vibrating sector provided with pins" through which intermediary the motion of the connecting rod is communicated to the rocking shaft, and thirdly the combination of a second arm or lever with the first named slotted arm, which second arm or lever descends as the needle rises, and so controls the thread. The slotted arm is curved so that the motion of the needle may be faster at one time than another. When the needle stock rises "it lifts thread upwards from the cloth twice as fast as the stock rises, owing to the fact that the thread leads in a bight through the eye in the stock, and as the stock thus rises" the thread lever before-mentioned "descends and pulls thread through the eye in the stock as fast as the" lever descends and to the extent of the descent. "These actions on the thread are reversed as the needle and stock descend," and "by thus controlling a large amount of slack thread in proportion to the extent of motion of the needle, a comparatively large shuttle can be used in connection with a needle having a comparatively small range of motion."

In the remaining portion, which refers to machines of the second named class, a vibrating motion is imparted to a thread carrier or looper "in directions perpendicular to its advancing and retreating motions, or nearly so, by means of a revolving sur-

" face inclined to a revolving shaft, the thread carrier stock being " forced against that surface." Also, four motions are imparted to a thread carrier " by means of an inclined revolving surface, a " pin or sleeve, and a pivot, the whole either acting on the stock, " or controlling its motion." With this carrier or looper is also combined a " stationary assistant," which is fixed near the needle hole in the table and has for its object the guiding of the lower thread and preventing it from being caught.

There is also another improvement described which is applicable to sewing machines of various kinds, and which has for its object " the keeping of an equal tension on the thread even when the " length of stitches is suddenly altered or a sudden jump is made " from thin to thick material, or from one thickness to a number " of thicknesses of cloth or other goods. This contrivance con- " sists essentially of two tension apparatus or frictions applied to " the needle thread, the one weaker than the other and stationary, " and the other stronger and reciprocatory, the two acting in " connection with an eye or leader on the needle arm, and the " latter moving in such a manner that the stationary friction ap- " paratus prevents thread from falling slackly in the way of the " needle point, as the latter penetrates the cloth, while at the " same time slack thread is formed by the approach of the moving " towards the stationary tension."

[Printed, 1s. 6d. Drawings.]

A.D. 1862, April 21.—N° 1162.

CALLEBAUT, CHARLES.—" Improvements in sewing ma- " chines " as follows :—

1. " The construction of a frame or machine for sewing at " option transversely and longitudinally by means of a shaft " placed underneath the machine, this frame forms one with the " drawing hook or feed motion," " and receives its motion from two " cams fixed to the shaft working the shuttle by pushing forward " a lever for changing its action to the right or left, one of these " cams is placed in communication with the frame; a double " spring moved by the lever passes on the frame in a transversal " and longitudinal direction, and two screws serve to regulate the " length of the stitch in either direction."

2. Certain " ungearing mechanism " applied to the " shaft " working the drawer in order to change the direction of the

“ drawing mechanism, and cause the stuff to return on itself to “ produce the superposed or stop stitches.” It consists of “ a bevil “ wheel, on each side of which is set another bevil wheel.” These smaller wheels are on the same shaft, which always rotates in the same direction, so that as each one is thrown into gear with the first bevil wheel the direction of rotation of the latter is reversed.

3. “ Replacing the handle of the shuttle by a pinion catching “ into a double diameter wheel, carrying a cam which at every “ two stitches gives a motion to the drawing hook in a transversal “ direction when the machine is set up for sewing in a longitudinal “ direction.” Thus is made the “ sock stitch.”

[Printed, 10d. Drawing.]

A.D. 1862, April 25.—N° 1206.

SALISBURY, SILAS COVELL.—(*Provisional protection only.*)—
“ The object of this invention is to manufacture sewing machines
“ that shall be equal to heavy work.”

The driving shaft is mounted above the table, and at its front end is carried a compound cam, which by means of levers works the needle holder, lifts the presser, and works the feed. At the opposite end of the lever are the driving pulley and the cam for working the spool case or shuttle. “ Instead of forming the “ shuttle race as heretofore,” it is proposed to “ support the “ shuttle carriage on guide rods;” and “ in order to maintain “ the proper tension of the vertical needle thread,” it is suggested to “ give the bobbin which carries that thread an intermittent “ axial motion by means of a cam on the driving shaft actuating “ a pawl, which takes into the teeth of a ratchet wheel on the “ bobbin axle.” “ For taking up the slack thread,” “ a swing-“ ing arm, pendent from the vertical needle box,” is used. Through the end of this bar the thread is passed on its way to the needle. “ A crank pin on the end of the crank shaft gives “ this arm a movement outwards at the moment the slack is “ made, and thus the slack thread is drawn on one side.” “ This “ arrangement applies to the improved spool knot stitch machine “ for which ” the inventor “ obtained Letters Patent, dated 26th “ of April 1861, No. 1059, and also to the ordinary class of “ shuttle machines.”

[Printed, 4d. No Drawings.]

A.D. 1862, May 28.—N° 1606. (* *)

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Charles Amédée dé Laire de la Brosse and Emile Adrien le Cœur.*)—“ Improvements in circular looms or machinery for the manufacture of looped or knitted fabrics.”

This invention consists of improvements upon a former patented invention, Specification No. 78, A.D. 1858.

“ In narrowing the needles and sinkers perform three functions.” The first set is fixed; the second set is free to slide or move in a circular direction to fill up the space left by the needles, and the loop-forming sinkers as they are raised; and the third set is successively raised or removed to produce the narrowing. “ When the knitting of the stocking is accomplished, as in the ordinary frame, and when the narrowing has to be commenced, “ a loop to the right and left of the loop-forming needle is “ removed and carried on to the moveable needles; this operation “ is performed at every narrowing. The needle and the loop “ sinker are afterwards removed, and the filled needles successively take the place of those removed.”

In this arrangement of mechanism certain parts for effecting “ the mechanical sewing or stitching of stockings and other articles of hosiery” are introduced. These consist of a needle, “ terminating at its upper end in a hook, and fixed on a support “ which is prolonged at its lower end to increase its stability,” and a guide which is placed “ excentrically inside the ordinary “ guide” for the purpose of guiding the needle sinker, which is fitted in a space in the comb of the fixed sinkers, by which it is carried “ round the circuit of the machine.” “ The undulation “ of the guide makes it rise and fall to effect its work,” and another guide causes the needle to fall, and in its motion to knock down the loop. “ The result of this arrangement is that “ a loop of the stocking or other article under manufacture is “ turned over and returned to constitute the mechanical sewing.”

The patentee states that the product “ issuing from this machine “ is distinguished from all other analogous articles by the “ configuration of the narrowing.”

[Printed, 10d. Drawing.]

A.D. 1862, May 29.—N° 1619.

PATERSON, JOHN.—An improved hemmer. This apparatus is constructed from a flat conically-shaped piece of metal by curling

over the edges towards the middle. Thus the end nearest the needle approaches nearly to a point while the other end is open for the entrance of the fabric. This hemmer is placed on its side on the bed plate, and in rear of it is an "upright with a spring," which assists in guiding the fabric to the hemmer.

[Printed, 8*z.* Drawing.]

A.D. 1862, June 11.—N^o 1737.

BLAND, HENRY.—"Improvements in sewing machines." The chief features in this invention are, the construction of horizontal instead of vertical sewing machines, "that is to say, the work to " be sewn is held vertical whilst the needles pass horizontally " through the same;" the use of needles set at angles instead of perpendicularly to the fabric, and a new tension apparatus.

In machines of the first class, two needles are used, "one at " each side of the machine, so disposed as to cross each other " at an angle in passing through the work, each needle holder " slides freely between guides, and turns on a pivot, so that as " each holder aforesaid comes into contact with a small roller, the " needles will be pushed forward, and thus advance the work " another stitch." A simple feeding apparatus worked by a cam may be added to these machines.

Another part of the invention provides for the construction of machines in which the work is fed by the needles. This is done by the use of two straight needles, "each connected to a holder, " also connected to bent or curved arms or levers jointed together, " one extending above the bed plate of the machine, and the " other below said bed plate, so that each needle in passing " through the work to be sewn describes an arc of a circle, but " as the point of each needle inclines outwards it follows, there- " fore, that after said points have passed through the work, and " in consequence of each needle being inclined, the effect is to " cause said needles to press or force the work forward." A holder keeps the work steady. "An important feature in this " arrangement consists in attaching the aforesaid curved arms " of the uppermost needle holder to the outside of the bed plate " of the machine, and in so curving or bending same that their " opposite ends meet together at the centre of said bed plate, " where they are connected together, and to the needle holder " which may be adjusted to any desired angle by a thumb " screw."

The tension apparatus is described by the inventor as follows :—“ Through a hole I pass a screw, in the end whereof, and about three-eighths of an inch deep, I drill a small hole which comes out at the side of said screw. Through this hole I pass the sewing material from the bobbin to the needle, coiling the sewing material around and between some of the threads of the screw, an index or pointer being fixed to a piece of metal through which the screw passes, and immediately under said screw I fix a thin plate, the edge whereof is serrated and corresponds with the pitch of the thread of the aforesaid screw. From the points of each serration I engrave a line, and beneath numbers beginning at the point of the screw with No. 10, next 20, then 30, 40, and so on, in succession ; I also engrave numbers 0 to 9 on the head of the screw aforesaid, these numbers being the units between the numbers on the serrated plate aforesaid, so that suppose the sewing material to be coiled round five threads of the screw, and the serrated index to indicate 50 for example, I know that in using one size of sewing material I have only to coil it round the screw until the last coil comes opposite to No. 50, and I have the right degree of tension.”

[Printed, 1s. 6d. Drawings.]

A.D. 1862, June 13.—N° 1759.

GLEW, JOHN HENRY.—“ This invention relates to that description of sewing machines in which two needles and two shuttles are employed.”

A web or vertical plate is placed in the middle of the shuttle race, and the shuttles are placed “ face to face on each side of the web, by which means two rows of stitching can be obtained much closer than by any other method, the web being employed simply to form the guide or race for each shuttle. The eye of one needle is at right angles with the shuttle race in the usual manner, but the eye of the other needle is at or about an angle of 45° with the shuttle race, and one needle is threaded at the front, and the other at the back, or in some descriptions of machines at opposite sides. The two needles and shuttles are worked by one set of actuating parts, and can be applied to any description of shuttle sewing machines.”

[Printed, 10d. Drawing.]

A.D. 1862, June 28.—N° 1900.

CALLEBAUT, CHARLES.—An apparatus of sewing on “piping” to fabrics, by which preliminary “basting” is rendered unnecessary. It consists of a metal guide, “fixed by a support to the standard on which slides the needle holder. This guide is provided with an opening by which the cloth band forming the piping is maintained during its passage for being sewn. A metallic prolongation is placed tangently to one of the internal sides of the opening, and the two folded parts forming the piping bear against the said prolongation. The edges of the two parts of the cloth to be sewn with the piping are placed one above, and the other underneath the piping, so that the edges of these four parts of the cloth are in the same plane.”

[Printed, 8d. Drawing.]

A.D. 1862, July 4.—N° 1945.

CUNNINGHAM, WILLIAM JOHN.—An improvement in sewing machines which has for its object the stitching of button and other holes. The machine is worked with two threads, one carried by the upper needle, the other by a shuttle underneath. The edge of the hole is bound by parts of the shuttle or under thread being in succession carried through the hole and on to the upper surface of the work by means of a little forked instrument worked from below, “before each time of the passing of the needle thread through the fabric.” In order to give strength to the edges of the hole, worked as above explained, a strengthening thread or ‘bar thread’ is introduced by a guide, the eye or end of which comes above the work and conducts such thread into a position to be bound in at the edges of the hole by the working of the needle thread, and the shuttle or under thread.”

[Printed, 1s. 2d. Drawings.]

A.D. 1862, July 16.—N° 2040.

NEWTON, ALFRED VINCENT.—(*A communication from Nicholas Wilkins.*)—This invention relates to that class of sewing machines in which a rotating hook is employed in combination with an eye-pointed needle and a spool, and in which the said hook enters between the needle and its thread to form the needle thread loop, and carry it around a spool which carries the other or locking thread.” The improvement consists in substituting

for the brush and other forms of "loop-checks," a finger, slightly curved and projecting from the ring which holds the spool, in front of, and nearly parallel with the spool. The inner face of this "loop-controller," as the inventor styles it, is curved, as is also the under edge.

[Printed, 8d. Drawings.]

A.D. 1862, July 18.—N^o 2051.

WILLCOCK, JOSEPH. — (*A communication from Amos Hanes Boyd.*) — "A new ornamental fabric, and the machinery for producing the same."

The fabric is made by means of a sewing machine, having the usual mechanism for forming a seam, and in addition thereto certain apparatus by which threads, cords, braids, &c. are interwoven with the threads of the sewing at each stitch, so as to form a kind of gimp or fringe. The fabric is also sewn on the surface of the cloth at the same operation. The threads of the sewing machine may be considered as the warp, and the ornamenting threads as the weft. The ornamenting threads are manipulated by means of light pendulous levers or thread carriers, which are placed side by side, and have their fulcra upon the "goose neck" or overhanging part of the machine. In the lower end of each lever is an eye, through which the ornamenting thread is passed. In making fringe a looper is added to hold the loop extended until it is secured by the sewing threads.

The invention also relates to the feeding apparatus, and here the improvement consists in the "employment of a feeding instrument upon each side of the fabric, working in conjunction with each other, by means of which the feeding of the material may be better controlled when required to be regularly fed along, and also by means of which the material may be wrinkled or gathered as it is passed through the machine, and sewed in that condition."

[Printed, 1s. 8d. Drawings.]

A.D. 1862, July 29.—N^o 2144.

THOMPSON, ROSEWELL. — (*Complete Specification, but no Letters Patent.*) — This invention relates to the hook and bobbin of sewing machines, and is divided into the following heads :—

- (1.) "Making the packing box in which the hook revolves of
" raw hide, cloth, felt, or other suitable non-metallic substance
" susceptible of the requisite amount of friction without the use
" of any lubricator, thereby effectually obviating all liability of
" soiling the thread."
- (2.) "Constructing the removable bobbin case with a start
" upon its outer end, for the purpose of revolving said case with
" the hook, and also to act as a cast-off for the thread when the
" point of the hook has entered the loop formed by the needle."
- (3.) "Making the body of said start elastic, and so attaching
" it to the bobbin case as to spring out a little from it, in order
" that said case when placed in the hook may be prevented from
" working out by the friction of the said elastic start."
- (4.) "The use of a spring on one side of the hole in the hook,
" and a screw passing from the outside of the hook against said
" spring, whereby the tension of the bobbin thread can be regu-
" lated without removing the bobbin or its case."

[Printed, 8d. Drawing.]

A.D. 1862, August 12.—N° 2260.

LEBLOND, JEAN FRÉDÉRIC JOURNAUX.—(*Provisional protection only.*)—The object of this invention is a sewing machine to produce various kinds of stitches. The machine in question makes the shuttle stitch in the ordinary manner by means of a vertically-moving needle and a horizontally-reciprocating shuttle. To make the single thread chain stitch, a small bent hook, adjustable by a set screw, is substituted for the shuttle. This hook "introduces itself between the fabric and the thread of the vertical needle during the time this latter performs its rising motion, thereby forming the loop which the hook then leaves, the fabric being at the same time carried forward to the required distance," thus allowing the needle in its next descent to carry the thread through the loop just obtained. To produce the chain stitch with two threads, a second thread is passed through eyes in the hook. Thus each thread forms a loop, "the loop of the hook thread being inserted in that of the needle thread."

The inventor provides his machine for sewing hosiery fabrics with the "ordinary vertical needle and a revolving disc, in which the pin points are inserted for the edges of the fabric to be attached to, whilst the hook for forming the loop is jointed

" underneath the fabric, and the vertical needle, leaving the required open space when this needle is descending," forms a " mantua-maker's or whipped hem."

[Printed, 6d. Drawing.]

A.D. 1862, August 20.—N° 2328.

CALLEBAUT, CHARLES.—"The first part of this invention has for its object to obtain a double whip stitch, either crossed or zig-zag on the edge of the stuff."

This stitch is obtained by means of an ordinary shuttle machine to which a certain hook is added. "When the needle, after forming a loop, has risen above the table, this hook is made to catch hold of the thread, to turn it over the edge of the fabric, and bring it back underneath, so as to form a second loop, through which the shuttle passes; this movement of the hook takes place at the same time as the stuff advances." For sewing in the centre of the fabric the second part of the invention is used. It consists in so applying certain gearing worked by the horizontal shaft driving the needles, that a longitudinal as well as transverse movement is communicated to the feeder. Thus the inventor obtains "a simultaneous movement of the fabric in a transversal and longitudinal direction," and so forms the zig-zag stitch. By "employing the same arrangement of wheels of different diameters to obtain at intervals a retrograde movement of a length equal to that of half stitch," a superposed stitch may be formed which gives additional strength to the work. Another part of the invention consists in "employing a guide for unrolling and assisting the sewing of the knitted fabric, composed of several flexible blades, between which the knitted fabric to be sewn is engaged, and of a moveable piece for regulating the width of the tuck." A guide for hemming umbrellas is also described. It is "somewhat similar to hemming guides, with the exception that the centre is formed of a rather thick pan, in which a hole is made for the passage of the edging."

[Printed, 10d. Drawing.]

A.D. 1862, October 11.—N° 2742.

FRANKLIN, EDMUND JOHN.—(*Provisional protection only.*)— "A combined spring tape measure, needle case, and pincushion."

The body of the combined instrument consists of a case "in a portion of which the spring tape measure is contained The pincushion is formed upon a portion of the edges of the said case or box, and that part of the interior of the box or case not occupied by the spring tape measure being filled with saw-dust, wool, or other material, to retain the pins inserted in the pincushion. On the sides of the box or case containing the tape measure and pincushion flaps or covers are situated, one or both of which may open from the case after the manner of the cover of a book. Between the moveable flap or flaps and box or case pieces of fabric are placed, into which the needles are inserted, or openings or recesses may be made in the inner sides of the flaps for the reception of the packets of needles. The flap or flaps are secured in their places when shut down upon the case by elastic loops or other fastenings." The sides of the combined spring tape measure, needle case, and pincushion may be variously ornamented.

[Printed, 4d. No Drawings.]

A.D. 1862, October 11.—N° 2749.

NEWTON, ALFRED VINCENT.—(*A communication from Walter Davis Richards.*)—An invention intended to simplify the construction of shuttle sewing machines. It is proposed to do away with the shuttle and to substitute for it "a bobbin holder of sufficient capacity to receive a reel of thread. This bobbin holder is open at the centre to receive the vertical needle on its descent, and it is provided with lateral A-shaped projections for spreading the loop formed by the vertical needle." Keyed on to the extremity of the driving shaft is a disc to which is attached a bracket. This bracket serves to carry a segmental wire guard for preventing the entanglement of the threads. The bracket also forms a bearing for a spindle, which carries a hook for taking up the loop of the vertical needle and passing it round the bobbin. The hook is made to rock on its axis, so that it may advance and retire as required by means of a segment rack carried by a bent lever attached to the disc before mentioned, and bearing upon a fixed cam surrounding the driving shaft. A small pinion on the spindle that carries the hook gearing into the segment rack communicates an axial motion to the hook, which motion is derived from a spring (on

“ the disc) which constantly presses the bent lever into contact “ with the cam, and the reaction of the cam when its increasing “ radius is presented to the bent lever.” A feed bar working upwards through the table is also described. It is actuated by cams on the driving shaft, “ one cam (which is bored with an “ oblong centre to allow for its adjustment eccentrically) being “ embraced by a fork from the feed bar, and the other acting on “ a pendant projection of the bar.”

[Printed, &c. Drawing.]

A.D. 1862, October 14.—N^o 2775.

JOHNSON, JOHN HENRY.—(*A communication from David Wood Green Humphrey.*)—A machine for sewing button holes, or edge finishing. “ In this machine the vertical needle bar carrier has a “ lateral motion imparted to it by a cam for the purpose of causing “ the vertical needle to pass alternately through and over the “ edge of the material. . . . A loop carrier operates beneath “ the table, being connected by a bar with a suitable cam on the “ vertical cam shaft. It is provided with two points, which work “ alternately, and enter the loops of the needle thread from “ opposite directions The looper which carries the lower “ or binding thread is fitted to a bar which also receives its “ motion from a cam Another bar also worked by a cam “ carries a hook for spreading the loop of the binding thread, and “ operates a loop check.” Curved motion is imparted to the looper and hook. “ The vertical needle carries a loop of the “ finishing or upper thread through the edge of the cloth, which “ loop is then entered by one of the two points of the loop carrier, “ and drawn to one side, the loop carrier moving forward and “ laterally far enough to receive the needle as it descends over the “ edge of the cloth, and through the retained loop on the point “ of the loop carrier, the loop check holding the loop in such a “ position as to ensure the passage of the vertical needle through “ it. The loop check and the loop carrier now retreat, leaving “ the loop which was carried through the cloth over the needle, “ and free to be drawn up at its next descent. The vertical “ needle then continues its descent over the edge of the cloth, “ forming another loop, which is entered by the opposite or “ second point of the loop carrier. The looper then passes a “ loop of the binding or under thread through the over edge “ loop, when the point of the carrier and the vertical needle

" retreat, leaving a loop of the finishing thread over the looper.
" The hook above referred to now seizes the loop of the binding
" thread and holds it open until the vertical needle carries another
" loop through the cloth and enters this loop of the binding
" thread, whereupon the looper withdraws from the over edge
" loop, and at the same time the hook releases its hold upon the
" binding thread, leaving its loop round the vertical needle near
" its point, the further descent of this needle drawing up the
" over edge loop. As the vertical needle rises again, it forms
" another loop, which is entered by one of the points of the loop
" carrier, as before described, and thus the stitch is completed."
The feed motion is as follows:—Under the cloth table is a horizontal cam driven by a horizontal lever working in ratchets on its periphery. "The feed lever is held in contact with its cam by a spring, and an adjusting stop screw is provided for the purpose of regulating the stitch." "When feeding the rounded part of the button hole the cam wheel moves faster than when feeding the straight part, to prevent crowding of the stitches at the round part." This change is effected "by an adjustable plate on the cam end of the feed lever The material is held between two slotted feed clamps, neither side of the cloth being directly acted upon by the feed or friction to draw or displace them. The rim of the upper clamping plate when feeding the round part comes in contact with a presser wheel, which keeps the edge of the lower plate close to a circular projection on the cloth plate; a second pin or projection on the underside of the clamp drops through a slot in the cloth plate, and into a groove in the upper surface of the cam wheel." Thus the clamped fabric is guided during the stitching of the button hole.

[Printed, 1s. Drawing.]

A.D. 1862, October 23.—N° 2855.

CLARK, WILLIAM.—(*A communication from Dwight Tracey and George Hobbs.*)—Under this patent the inventor claims the following:—

(1.) The delivery to the needle at each stitch of "a measured length of thread corresponding to the thickness of material to be sewed, and the drawing up of such measured length of thread by a uniform and positive action to complete the stitch by means of the needle and its actuating mechanism."

(2.) Forming a "clamping device or gripper for the needle thread by the combination of a bent lever with a plate on the needle arm or their equivalents," operated by a stop on the connecting rod.

(3.) "A device for drawing sufficient thread from the bobbin to make the next stitch in advance of its delivery to the needle." It consists of a forked lever which descends as the needle bar rises, and so draw down thread from the bobbin. At the same time the needle thread is clamped near the needle, "so that any inequality in the friction of the spool or in the delivery of the thread owing to entanglement or other cause, cannot affect the uniform tightening of the stitch."

(4.) "The employment, in combination with the rotating hook, of a spool case placed diagonally to the axis of motion of the hook," thus enabling the use of a large bobbin, and assisting the passage round it of the needle thread.

(5.) The use of a loop check in combination with the needle and rotating hook, the object of which is to regulate the supply of thread from the spool, and "constituting what may be termed an independent thread supplying device, by reason of its operating to supply thread from the spool to the needle with an action entirely independent of the means by which the tightening of the stitch is effected."

(6.) A "detached or movable feed dog," which rests on the point of a screw, and is loosely connected with the spring attached to the feeding bar in such a way that it adapts itself to any increase or diminution of thickness of the work.

(7.) The employment in combination with the feed bar, of a variable cam and adjustable contact surface for giving a graduated movement to the feeding instrument." The face of the cam is made "with an incline of sufficient elevation at the periphery to give the feeding dog an extent of motion in the direction of the seam sufficient for the longest stitch required to be made, and in the inner part next to the shaft of an elevation sufficient for the shortest stitch desired to be made, and the surface in a radial direction inclined from one to another." The lever which communicates the motion to the feeding bar is mounted on an axis "which is made to slide longitudinally in bearings . . . transversely to the shaft, so as to present the contact surface to that part of the cam which will impart just the extent of motion to the feed dog that will give the desired

"length to the stitches." Simple modes of constructing spools out of card and thin metal are described.

[Printed, 1s. 10d. Drawings.]

A.D. 1862, October 25.—N° 2879.

ALFRAISE, PIERRE.—(*Provisional protection only.*)—This invention comprises the following:—

(1.) "Actuating the needle carrier by a jointed frame or parallelogram, which consists of four jointed or articulated levers, bars, rods, or arms, and acts as the tension piece" for the thread.

(2.) "The employment of a cam, or an eccentric" or a slotted or grooved disc for actuating the parallelogram.

(3.) "Combining a pulley or wheel with a stationary eccentric or cam," whereby "the stopping interval of the needle while the shuttle is passing" is obtained.

(4.) Fitting the needle excentrically in its stock, "or a short distance from the centre thereof," and the needle carrier being caused to make half a turn at each stroke, the needle works excentrically on "on each side alternately." Thus a zig-zag stitch is made.

[Printed, 6d. Drawing.]

A.D. 1862, November 12.—N° 3048.

CLOWES, FREDERIC JOSEPH.—Obtaining rotary motion for sewing and other machines by substituting a cam or cams fixed on a straight shaft in lieu of a crank or cranks. The cams are grooved on their outer periphery in order to receive a strap or chain which works round a pulley in the treadle.

[Printed, 10d. Drawing.]

A.D. 1862, November 25.—N° 3165.

NEWTON, ALFRED VINCENT.—(*A communication from James Alford House and Henry Alonzo House.*)—This invention relates to a machine for sewing button holes. The work is done by means of an eye-pointed needle, descending through the fabric, yet worked from below, and a "finger or thread carrier" also working from below. The entire stitching mechanism is mounted on a "disc or independent frame capable of being rotated automatically" "at proper intervals without interfering with the operation of

" stitching." A strong rigid frame carries the whole. Upon this frame is mounted another frame which traverses backward and forward upon it in a rectilinear direction. On this latter frame and at one end of it is hinged a cloth table on which the material rests and also hinged at the same end is a cloth presser. When the table is down, resting on the frame, the cloth presser rests on it, having the material between them. The needle carrier works upwards through the centre of the disc and through a hole in the table. The finger or thread carrier is supported at the end of a horizontal bar rocked by an arm playing in a groove on a sector-shaped cam pivoted upon the disc and when in position the finger is close to the needle. A driving shaft works in the frame. The bed plate and moveable frame derive the movement from this shaft in the following manner :—On the shaft is a sleeve carrying two bevel wheels, one of which acts at a time on another bevel wheel situated between them. This latter wheel rotates a screw shaft working through a female screw on the frame. The sleeve carrying the two bevel wheels is moved backwards and forwards on the shaft, so as to throw one or other in gear, by means of the working of the disc, at each half revolution. The needle carrier or shank after passing up through the table is bent over into a Ω shape, so that the needle when in place may be parallel with the stem, and a tension post is also secured on the stitching plate to prevent the kinking of the needle thread. Spool cases are inserted into holes in the disc; they are cup shaped and will take an ordinary reel. The stitch is made as follows :—" As the " straight needle descends it passes through a loop of the finger " thread and then through the cloth, the loop of finger thread " being tightened at the same time by the backward and downward " movement of the finger; after passing through the cloth the " needle descends on the inner side of the finger (which is all the " time retreating) until its point is about $\frac{1}{2}$ of an inch below the " front of the finger, to allow sufficient loopage, it then begins " to ascend, the loop opening as it rises, and the finger passes " through the loop thus formed and up through the slip and " over the edge of the fabric. When the movement is reversed " the needle again passes through the finger thread, which is " again drawn tight." Owing to the positions of the needle and finger " their threads are alternately thrown partially round each " other, thus producing an interlocked stitch."

[Printed, 1s. Drawing.]

A.D. 1862, November 28.—N° 3190.

BOECKE, FRANZ.—“This invention relates to certain improvements upon what are commonly known as the Wheeler and Wilson and the ‘British’ sewing machines, but they are also applicable to other sewing machines of the same character.” “It is proposed to construct the bobbin or under thread case with a raised conical or rounded boss or projection in the centre on that side next which the needle works, a corresponding recess being made in the back of the hook when adapted to the Wheeler and Wilson machine.” By this means a “twisted chain stitch having a second thread passing through the loops may be produced” or the under thread may be dispensed with, in which case the machine will produce the twisted chain stitch from a single thread.” “The object of the projection in the side of the bobbin or thread case is to hold back one side of the loop of the needle thread until the point of the needle has passed down in front of it, so that on the thread slipping over the projection the loop will be round the needle, and consequently round the thread carried by the needle, thus forming the chain stitch. The operation is precisely the same when a second thread is used. In some cases an outer projecting rim is formed on the same side of the thread case, as the projecting boss, and concentric therewith, whereby the boss may be made smaller as the thread is partially held back by first catching on the edge of the projecting rim, and then slipping off on to the central boss or projection.”

[Printed, 8d. Drawing.]

1863.

A.D. 1863, January 15.—N° 140.

PRINCE, ALEXANDER.—“Improvements in sewing machines,” consisting of, firstly, feeding the fabric by means of a moveable needle bar, and secondly, the substitution of a glass needle plate for the metal one usually employed. The object of this substitution is to render the working parts distinctly visible to the operator without dismounting any portions of the machine. The

motion of the needle bar is obtained " by the action of screws or " pins operating upon or against projections of metal, glass, or " other hard substance, each presenting either an inclined plane " or a curvilinear surface to the pins or screws, the projections " being attached to and projecting from the front plate of the " machine head. In some cases instead of the above projecting planes or surfaces there may be substituted " a plate having a " slot or channel cut lengthwise therein, the upper portion of the " slot being straight and the lower portion being made angular " or curvilinear thereto."

[Printed, 8d. Drawing.]

A.D. 1863, February 14.—N° 405.

LEWIS, JAMES.—(*Provisional protection only.*)—This invention consists in driving sewing machines by "coiled springs or by "coiled cords (or chains) and weights." Multiplying gear must be used to increase the speed and for winding up the apparatus "a separate winding shaft or stud connected to the drum shaft "by gearing" is employed. The object of the latter is to get increased power. The inventor proposes a friction brake for stopping and starting the machine.

[Printed, 4d. No Drawings.]

A.D. 1863, February 24.—N° 514.

CLARK, WILLIAM.—(*A communication from Frederick William Grote and Claus Ortgiers Tietjen.*)—The first part of this invention relates to a device for extending the loop of the upper thread under the material and carrying the under or locking thread through it. Under the cloth table and so situated that the needle in descending shall pass close to its side, is a vertical cylinder, having a reciprocating motion on its axis communicated to it by a pinion and toothed segment. At the bottom of this cylinder and supported on a fixed pillar is a flat plate or table, somewhat smaller than the interior of the cylinder, so that the latter is free to reciprocate round it. The spool containing the locking thread rests in a loose box on this table, the spool being fixed in its box by a spring and nut to afford the required tension. There is a space between this spool box and the interior of the cylinder, sufficient for the passage of the thread, and spherical feet are provided to the box where it rests on the fixed table to

facilitate the passage of the thread. At the side of the outside cylinder is a hook which, as the needle descends, engages with the loop of the upper thread. The cylinder partly revolves by the means above described and draws the loop down and under the loose spool box. Thus the locking thread carried on the spool is passed through the loop of the upper thread. By means of a lever carrying an eye through which the thread is passed before reaching the needle the slack is taken up. This lever is worked by the reciprocating cylinder before mentioned. The feed is performed by means of a "top wheel." This wheel is carried at the end of a bar so contrived that the direction of the feed may be altered at will by partly turning the bar on its axis, after which a pin is dropped into a notch on it to hold it in its place. The lower part of this bar is bent so as to bring the wheel to one side of the axis of the said bar, and so to enable the needle to be brought directly in line with the axis of the bar, by giving the lower part of the needle bar a proper bend or offset, thereby causing the needle to be always near the feed wheel, no matter what alteration in the planes of revolution of the wheel. The wheel is pressed on the cloth by a spring and it is rotated by a lever working a dog and a shoe inside the rim of the wheel; as the lever rises, its dog is caused to press the shoe against the rim of the wheel and so turn it, and on the depression of the lever the dog is released from the rim and moved without turning the wheel. To give tension to the needle thread the spool is placed on a screw spindle and pressed firmly against a fixed collar at its lower end by a nut screwing on the said spindle. The spindle thus carrying the spool is held between the point of a screw at the top and a spring at the bottom and is thus compressed between its supports. The tension is increased by the top screw. A provision is made for oiling the thread by passing it against a sponge holding oil.

[Printed, 1s. 4d. Drawings.]

A.D. 1863, February 28.—N° 576.

HASELTINE, GEORGE.—(*A communication from Lebbeus Wisner Lathrop.*)—(*Letters Patent void for want of Final Specification.*)—The improvements mentioned in this specification are, "a hollow grooved revolving hook used instead of a shuttle;" "a flanged spool holder which works in the groove on the inside of the

" hook ;" " an expanding and contracting spindle for the lower " spool " constructed with a spiral spring in its centre, " whereby " it is adjustable to different sized spools ;" " a spool guard " which is constructed to prevent friction of the needle thread " upon the under thread and spool ;" " a hook for taking up " and controlling the slack of the needle thread as it passes from " the point of the revolving hook," and the means of obtaining the tension of the lower thread.

[Printed, 4d. No Drawings.]

A.D. 1863, March 19.—Nº 741.

SMITH, GEORGE HENRY.—This invention relates to the feed motion of machines known as " double-action machines, and " consists in the combination of a working lever on which the " feeder is suspended from a fulcrum with an universal joint at " its upper part admitting of the feeder being moved either " forwards and backwards across the arm of the machine, or at " right angles to such directions, such feeder acting in com- " bination with a double guide, capable of being moved and set " so as required to form a guide way for the feeder in either of " its respective motions, and a bevel formed on the end of the " working lever for the purpose of acting on a bevel formed on " the feeder in order to produce the required motion of the same, " either in the direction of the length of the arm by the one bevel " sliding on the other, or in the direction across the arm by the " pressure of one bevilled piece on the other. By means of this " combination the feeder is worked through the several motions " by the agency of one lever instead of two levers as usual, such " lever having a fulcrum with an universal joint, and being " worked by an ordinary double tappet in the driving shaft."

[Printed, 10d. Drawing.]

A.D. 1863, March 26.—Nº 793.

PARKINSON, THOMAS, and WOOD, JOHN.—(*Provisional protection only.*)—This invention consists in " embroidering with " silk, cotton fabrics which have previously been printed by " ordinary processes to resemble or imitate better fabrics, so that " by the application of silk embroidery to cotton fabrics so printed " a novel manufacture is produced.

[Printed, 4d. No Drawings.]

A.D. 1863, April 14.—N^o 938.

KEATS, JOHN, and CLARK, WILLIAM STEPHENS. — The sewing machine described in this Specification is intended to make a lock stitch and the sewing is performed by means of a hook and a shuttle each carrying a thread. The hook is worked from above, like an eye-pointed needle. It descends through the fabric and table, passing through the centre of a small cog wheel. The use of this latter is to place the thread on the hook, which then rises and draws up with it the loop. The shuttle is moved to and fro above the plate which supports the material, “and is formed with a dove-tailed recess along its back, so that the shuttle may be supported by and move to and fro along a dove-tailed projection; this projection is carried by a curved plate that fits the back of the shuttle.” A small instrument is added to the hook slide for the purpose of opening the loop for the passage of the shuttle, and a spring is fitted to the shuttle to prevent the loop being drawn forward with the shuttle. The feed is performed either by a notched plate or a fork; and the bar carrying the feeding foot is made cylindrical so that by slightly turning it on its axis the direction of the feed may be altered.

[Printed, 1s. 4d. Drawings.]

A.D. 1863, April 24.—N^o 1016.

WILSON, WILLIAM NEWTON, and GREY, JAMES GRAHAM. —The first part of this invention relates to the four-feed motion machine, and is thus described by the inventor. “Instead of confining the four-feed motion to its up, forward, down, and backward motion, only to direct the cloth in a line at right angles with the body of the machine, and which feeds one way, I have what is called a reverse movement attached to the said feed motion, which throws the feeding lever from the cams which actuate it for one direction, and brings it into contact with other cams and actuate it for feeding in another direction, so that the up, forward, down, and backward motion of the feed is moved at right angles one from the other, thereby sewing lines of stitches at right angles to each other without turning round the cloth.”

Another improvement consists in fixing two inclined planes at the bottom of the shuttle box, so that “when the shuttle rests

" on these inclined planes the shuttle will always have a tendency " to press forward to the front of the shuttle race, insuring its " passing through the loop, and doing away with the necessity of " having set screws to set up the shuttle box."

A third part refers to a mode of making a lock stitch by means of a vertical needle, a spool case, and a hook. The needle carries down a loop which is seized by a hook carried at the end of a straight bar worked by a crank. This hook passes the loop over the spool and the stitch is tightened by the receding of the vertical needle in the ordinary way.

The fly wheel or brake wheel of sewing machines may also be tired with india-rubber or any other soft and elastic material. Against this soft tire a catch is directed so that when the wheel attempts to turn the reverse way, the catch impinges into the band and checks the revolution.

A means of regulating the stitch by the feed bar is also illustrated.

[Printed, 1s. 4d. Drawing.]

A.D. 1863, May 5.—N° 1120.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Jacques Desprez and Georges Montailé.*)—(Provisional protection only.)—This is an invention for making a new trimming by "sewing, sticking, or otherwise applying birds' feathers on a "ground of linen, cotton, or other like suitable foundation."

[Printed, 1s. No Drawings.]

A.D. 1863, May 5.—N° 1126.

COCHRAN, SAMUEL BEACH.—This invention relates,—

(1.) To an arrangement of mechanism for producing the lock stitch. It consists of an ordinary bobbin enclosed in a case and provided with suitable tension apparatus. "This reel case is placed in a carrier, which is connected at one end to a piston or driver working to and fro within a hollow cylinder formed on the front end of the driving shaft beneath the cloth plate. This connection is so formed as to admit of the rotation with the shaft of the piston or driver without rotating the carrier. A pin in the side of the piston rod passes through a slot made longitudinally in the tubular portion of the driving shaft, within which the piston rod works." The to-and-fro motion of the piston is obtained from a stationary cam and a second

cylinder or holder is provided to receive the thread case and carrier when they are pushed forward by the piston. "The loop of the needle thread is opened by a hook or looper carried on the cylindrical end of the driving shaft, and when fully extended the reel case is pushed forward so as to carry its thread through the open loop of the needle thread." The needle then rises and the reel case is returned to its normal position."

(2.) To the tension apparatus and stitch regulator. The inventor proposes a specially numbered tension for each thread, permanently adjusted by the maker, and he also recommends the addition of an indicator to the stitch regulator, which indicator will show the number of the thread to be used with a particular length of stitch.

(3.) To a method of fitting the presser foot to its shank so that it may be easily removed at pleasure.

(4.) To a mode of driving sewing machines so as to avoid the dead centres. "It consists in the employment of two rings in combination with friction rollers or wedges, which operate directly upon a rim on the side of the boss of the fly wheel; each ring is connected by a rod or link to the treadle, the two operating alternately, the rollers or wedges being kept up to their work by springs."

(5.) To a proposition "to make hinges for the covers of sewing machines in such a manner that they may be separated, and the cover removed when opened to a certain extent only. For this purpose one part of the hinge is made cylindrical, and fits into a box or chamber in the other part."

(6.) To an improved binder, "which is made self-adjusting." The binding is held by an upper "and lower hook in combination with a spring or hinged plate, which is acted upon by the ordinary presser foot, or may itself act as a presser foot in holding the material down. This plate is slotted for the needle to work through, and to admit of the lateral adjustment of the body of the binder to which the hooks and plates are fixed, the hooks being adjusted by an adjusting screw or screws of their own to suit different widths of binding."

[Printed, 1s. 4d. Drawings.]

A.D. 1863, May 6.—N° 1132.

SINGER, ISAAC MERRITT.—This invention has for its object various improvements in sewing machines. The spool holder is

made "in the form of an inclined trough in which the spool lies, and which is by preference formed with two flat sides at right angles to each other with a slit along the angle for the thread to pass off by."

A clip is provided to "hold the thread between the tension regulator and the needle at suitable periods, to prevent the elasticity of the thread from carrying the slack back through the tension regulator." "Hitherto a bridle has been used to limit the upward movement of the lever guide, such bridle being applied nearer to the outer end of the lever guide than the part acted upon by the needle slide." The improvement described in this specification consists "in placing the bridle nearer to the fulcrum of the lever guide, or in substituting for it a stop formed on the lever guide itself to limit the upward movement; the parts are however so arranged that the needle slide lifts the end of the lever guide a little higher than the bridle or stop would permit, were it not for the elasticity or spring in the lever guide itself, and on the return of the slide, the lever guide recovering this little extra movement allows the thread to slacken very slightly."

A vibrating shuttle is substituted for the ordinary reciprocating one. This consists of a flat circular case containing the spool, and the thread issues at the centre. There are various ways of supporting this shuttle; either by a spherical head attached to it, or by a nipple "forming a loose fulcrum for the shuttle to vibrate on, and out of which nipple the shuttle thread issues." In the first case, the shuttle is vibrated by a driver of the ordinary kind; in the latter, it is "supported by a curved path or race below, or by the driver, to which last a circular motion in a plane may be given if required."

Another improvement relates to the application of a curved wire "like a rats tail" to the back end of ordinary shuttles. "This tail detains each needle loop until after the shuttle has entered the next one; the first loop so detained being drawn tight by the action of the tail in detaining the second loop when the shuttle moves backwards." A similar effect may be produced by forming notches on the shuttles. Ordinary shuttles may be made with a "jointed nose or serpent head." In moving forward the elevated head enters the loop of the needle thread, and at the same instant turns down by the action of the projections referred to." The shuttle thread is held in a "forward

" position by means of a clip when the shuttle is moving backwards, whereby the thread is prevented from tangling."

Another part relates to the feed motion. "The inclination of the surface or surfaces is by preference 45 degrees of the circle to the ordinary direction of feeding, and with this contrivance the feed will take place in the ordinary direction, or in a direction having any inclination thereto up to 90 degrees of the circle accordingly as the dog may be guided by a grooved plate" in combination with certain details.

Arrangements for "plaiting a single ply of material" for forming goffers and compressing the parts stitched in the form of box plaits," for "frilling or gathering one ply of material and at the same time stitching it to another ply," are also described.

A further improvement consists in placing a ring horizontally to act as a hem folder. When "a strip of material is drawn horizontally through such ring, its two edges become folded." To fold a hem on one edge only "the ring is slit angularly to admit the material, the unfolded part going through the slit."

To make a guide or gauge for binding, and which "if necessary will turn in the edges of the binding material, a wire is bent backwards and forwards in one plane with four or more folds, and the folds are then bent or folded across in such a way as to nearly meet." The edge of the material to be bound passes between the folded parts, and the binding is threaded through the wires.

The remainder of the specification relates to the mechanism for feeding and stitching button holes. By one modification five threads are used for this kind of work. "Two threads are in separate needles, one of which descends beyond the edge; the third thread is in a shuttle beneath, and locks the thread of both needles, and the fourth and fifth threads or cords, as they may be, are laid backwards and forwards across each other on the surface by vibrating guides being fixed down by the needle threads, and forming a kind of braiding." Instead of the fourth and fifth threads, a braid or tape may be stitched along the edge. The button hole stitch may be performed with a single thread in the following manner:—"The needle descends through the material, and the loop formed by it is caught and drawn round over the edge of the material, and there is drawn through it the part of the thread above the material so as to form a

" second loop. There are thus two loops formed for each action
" of the needle, one from below and the other from above the
" material. The loop drawn from above is held until the suc-
" ceeding descent of the needle is formed, and the succeeding
" lever loop is drawn through it."

[Printed, 2s. 4d. Drawings.]

A.D. 1863, May 6.—N° 1137.

NEWTON, ALFRED VINCENT.—(*A communication from James Alford House and Henry Alonzo House.*)—This invention relates to improvements on the sewing machine for which provisional protection was granted on the 25th of November 1862, No. 3165.
" It is not proposed to depart from the principle of action of this
" machine, but to introduce various improvements in the details
" of construction of the machine. Thus, the stitching mechanism
" is mounted in a frame which traverses upon the main frame of
" the machine, but the stitching mechanism is enclosed in a
" casing composed of sections which protect it from view when
" the sections are united. Another improvement consists in
" mounting the nut of the screw which gives motion to the
" traversing frame in an open bracket in the casing, to allow of
" the easy removal of the frame from the casing. A fixed and
" an adjustable guide (for determining the length of seam to be
" sewn) is used. In this instance the fixed guide is mounted on
" the lower casing and the adjustable guide on the upper casing.
" The clamp used consists of a presser lever with an adjustable
" extremity or presser foot for regulating the pressure and fitted
" with a locking lever (which projects through a slot in the
" presser lever), and is used for lowering, raising, and holding
" down the presser lever. The tension apparatus for both needles
" is arranged underneath the bed plate. The lower thread passes
" through an eye carried by an adjustable retaining spring. The
" tension apparatus for the other thread consists of a lever
" playing vertically in its bearings, and pressed upwards by a
" coiled spring. The inner end of this lever enters a slot in the
" needle arm and has an eye near its point through which the
" thread passes. For graduating the length of stroke of the
" needle mandril an eccentric acts upon an adjustable cam
" carried by a slotted arm attached to the arm which forms the
" support for the needle mandril. Instead of a ratchet and click

" for rotating the sewing mechanism a frog and gripping lever
" are used. The movement of the two needles is made isochro-
" nous by coupling them together by means of a collar and a
" heart shaped cam projecting therefrom. For the purpose of
" bringing the looper and needle bar close together the latter is
" slotted to allow the looper to play into it; and in order to keep
" the edges of the fabric in proper position while being sewn a
" travelling button is dropped over the needle bar and held down
" by the presser foot before mentioned, so that it plays the part
" of the thimble in the former arrangement. It is provided with
" a small handle to facilitate its adjustment."

[Printed, 8*d.* Drawing.]

A.D. 1863, May 14.—N° 1212.

PILBEAM, ALEXANDER.—This invention more particularly relates to sewing machines in which the needle thread is carried over a stationary bobbin by a hook. In the machine described by the inventor, "the operator faces the side of the needle arm, the material being fed in a direction from the operator." The position of the feed apparatus and presser are reversed, and "the bobbin holder and hook are shaped so that their various parts lie in directions the reverse of those of the older arrangement." In the present invention "the feed works, the lower bobbin with its holder and hook, and the parts which actuate the needle arm" are all sunk below the level of the main table top, and in order to get at "the lower bobbin and its holder, the top plate of the machine is fitted with sliding plates, which can be removed, and the bobbin holder is hinged to the fixed part of the machine so that it can be turned into a convenient position." Various other parts are hinged together, so that the use of screws is avoided. Another improvement consists in contriving a compact case for a sewing machine. The machine, with the upper part of the supporting table, slides vertically down "into a case forming the lower part, being held up when in use by levers or catches. The treadle is fitted in the bottom of the case, and the connecting rod is made telescopic, or so that it can be easily disconnected." The front of the case folds down or on one side, and the top or lid is hinged to the top of one of the sides.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1863, May 20.—N° 1262.

COIGNARD, JOSEPH.—An improvement in the tension apparatus of the shuttle, to avoid the production of an irregular seam by the alteration in the quality of the thread caused by its passage through the various guide holes. According to this invention, the thread is wound on the bobbin of the shuttle as usual, and it passes round a presser roller of polished steel, which is maintained in position by a screw, and finally is issued to the work by means of a ring. By the use of such contrivance, the delivery of the thread is claimed to be uniform and smooth.

[Printed, 8d. Drawing.]

A.D. 1863, June 8.—N° 1424.

NEWTON, WILLIAM EDWARD.—(*A communication from William Penn Hyde.*)—The inventor forms the eye of a needle “by turning over the end and forming a lap joint through which the thread “may be slipped sidewise without the necessity of inserting its “end into the eye in the usual way.”

[Printed, 8d. Drawing.]

A.D. 1863, June 10.—N° 1440.

MADDERS, WILLIAM.—(*Provisional protection only.*)—This invention consists, first in treating a cheap fabric so as to make it resemble a ‘watered silk,’ and secondly in ornamenting such fabric by embroidering it.

[Printed, 4d. No Drawings.]

A.D. 1863, June 18.—N° 1528.

ROLPH, JONAS, and HEALD, ALFRED.—(*Provisional protection not allowed.*)—This invention consists in the application of the pantagraph to a sewing machine, and in producing what is called “a moving table, by means of two frames travelling in “transverse directions on slides or wheels . . . and propelled “from the tracing point of the pantagraph over any given “design.”

[Printed, 4d. No Drawings.]

A.D. 1863, June 25.—N° 1605.

LEE, HENRY CLAY.—(*A communication from Richard Mott Wanzer.*)—The features of this invention consist, firstly, in

“ mounting the shuttle driver on two guide rods, placed one above the other, for the purpose of reducing friction and giving stability to the shuttle driver, thus enabling the shuttle driver to be worked at a very high speed; secondly, in forming the groove of the shuttle driver oblique instead of vertical as heretofore practised, for producing a differential speed thereof, thereby causing the shuttle to enter the loop quickly; thirdly, a mechanical arrangement for taking up the slack thread while the needle is descending to the work; fourthly, adapting on the shuttle driver, and in front of the shuttle, a piece of metal (called by the inventor “ a guard ”), “ for the purpose of ensuring the formation of the loop as the needle ascends, and the certainty of the shuttle passing through the loop.”

[Printed, 10*z.* Drawing.]

A.D. 1863, July 10.—N° 1725.

LEGG, THOMAS, and GRIFFITH, RICHARD.—(*Provisional protection only.*)—The machine described by the inventors in their specification is intended to be used in sewing up the seams of tubular articles, as sleeves, boots, &c. The shuttle moves to and fro in the same direction as the work, i.e., parallel thereto. This shuttle is actuated in the following manner:—“ on the end of the driving axis, and in a line with the end of the box on which the shuttle works ” is fixed a crank or cam surface, “ which by a connecting rod actuates a slotted plate or frame, and by a pin or stud on a rod or arm attached to the shuttle entering a curved or inclined slot in the plate or frame, a to-and-fro movement is communicated to the shuttle, which is caused to ‘ dwell ’ at suitable intervals, by altering the direction of the slot at each end thereof.”

[Printed, 4*z.* No Drawings.]

A.D. 1863, August 19.—N° 2057.

JACKSON, WILLIAM.—Sewing machine for heavy fabrics, to be used with waxed thread. In this machine the stitch is performed by means of a hooked needle, a looper, and a rotating hook. The needle works from below, upwards through the material; the thread is then laid round the point of the hooked needle by the rotating hook. The loop so made is drawn down and deposited on the looper. The needle now rises again and brings down

another loop. The loop is drawn tight by the needle at the completion of its descent.

[Printed, 1s. Drawings.]

A.D. 1863, August 31.—N^o 2151.

NEWTON, ALFRED VINCENT.—(*A communication from Charles Frederick Bosworth.*)—The object of the inventor is to contrive a machine to perform a stitch that shall only show on one side of the material, and one, therefore, especially applicable to the manufacture of straw hats, &c.

The distinguishing characteristics of the stitch are, “that a double thread or bight of thread passes into one surface of a layer or piece of braid or other material, then out again through the same surface, and then through another layer or piece, and is then secured either by another thread as in a shuttle stitch, by a loop of another thread, as in what is known as the double-looped stitch, or by a loop of its own thread, as in a crochet stitch.” A roller is so combined with the needle and the feed apparatus that “a turn or bend is produced in one layer or piece of braid or other material to enable the needle to pass into one surface of it and out again through the same surface.” A contrivance is also added for guiding the needle itself at some points above the material being sewed, thus forcing the needle to pierce the braid or other material at a proper distance from the roller or bending surface.” The needle has a vibrating movement toward and from the said roller.

[Printed, 8d. Drawings.]

A.D. 1863, September 4.—N^o 2183. (* *)

THORNHILL, CHARLES.—(*Provisional protection only.*)—“A new or improved method of adapting steel or other suitable metallic wire to be used instead of animal bristles or hair in sewing boots, shoes, saddlery, and leather work generally.” The “metallic substitute” is made either with or without tails. A piece of wire, from four to seven inches long, is flattened at one end for a length of from two to four inches; the flattened end is twisted into a spiral thread, to which the sewing thread can be attached. Or a piece of wire, from eight to twelve inches long, is bent double; the one half is twisted round the other for a length

of from two to four inches, leaving the untwisted ends like two tails for the attachment of the thread. In both cases the wire thus prepared is tempered to a suitable degree.

[Printed, 4*d.* No Drawings.]

A.D. 1863, September 15.—N° 2261.

HOWELL, GEORGE.—“Improvements in machinery for stamping or obliterating and printing, especially applicable to post-office purposes, parts of which improvements are applicable to machines in which cams are employed.”

The inventor thus describes what he calls “the concurrent or “union cam,” and which he claims as applicable to sewing machines :—“It is double; the larger disc is enlarged or diminished “to produce the required movement, and the smaller disc is “diminished to make the cam equal in diameter between two “parallels or arms of a forked lever or pendant, which parallels “are divided or set out in order to catch the opposite edge of “each disc.”

An application of this cam to a sewing machine is illustrated. By means of forked levers, the cam works both the needle and shuttle bars.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1863, September 24.—N° 2352.

MARSHALL, THOMAS, and MARSHALL, WILLIAM.—Under this Patent the inventors propose to supersede the ordinary bristles used in sewing boots and shoes, by what they term a “metallic bristle” made of wire. These metallic bristles are split or roughened to take the wax-end, and are coloured white or electro-plated to enable the workman distinctly to discern them.

[Printed, 4*d.* No Drawings.]

A.D. 1863, October 5.—N° 2440.

LEGG, WILLIAM.—(*Provisional protection only.*)—The inventor proposes to form two or more parallel rows of stitching at once, by means of an alteration in the machine, which may at other times only be required to perform ordinary work. This alteration consists in mounting extra needles in the needle carrier, and providing an extra shuttle and shuttle box for each needle. The

whole of the shuttles are driven simultaneously by one action, as in ordinary sewing machines. The distance of the parallel rows of stitching from one another is capable of adjustment.

[Printed, 4d. No Drawings.]

A.D. 1863, October 17.—N° 2544.

CLARK, WILLIAM.—(*A communication from Antoine Bonnaz.*)—This invention for sewing and embroidering machines has a two-fold purpose, namely, putting the needle in or out of action instantaneously without stopping the motion of the machine, and contriving the cloth presser so that it may act in the desired direction “according to the design to be executed without the “ cloth requiring to be turned round to follow the contour of said “ design.”

The first of these objects is attained by throwing the shaft which works the needle bar, out of gear by means of a treadle and a peculiar kind of clutch. The treadle communicates with the clutch by means of suitable levers.

The bar carrying the presser foot is worked vertically through the driving shaft by means of a cam. The thrusting movement for the feed is obtained through a small lever acting on the presser bar, which lever is, in its turn, reciprocated by means of a vertically moving cone, encircling the needle shaft or bar. The end of the sleeve carrying the vertically moving cone is squared, and works in a corresponding aperture in a bracket attached to the presser bar. By means of a smaller hand winch working suitable bevel gearing, a certain rotatory motion can be communicated to the conical part, which working in the bracket on the presser foot, alters the direction of the feed.

[Printed, 1s. 6d. Drawings.]

A.D. 1863, October 20.—N° 2572.

DAVIES, GEORGE.—(*A communication from Abraham Hart.*)—Machinery for sewing over the edges of fabrics. There are two parts in this invention, the first relating to machines using one thread, the second to machines using an upper and an under thread.

The first arrangement consists in adapting to ordinary sewing machines a “hooked rod” and “a hook carried by a vibrating “ arm.” Motion is communicated to these instruments through

the medium of levers, so that they work synchronously with the needle arm. The needle in its descent penetrates the fabric a short distance from the edge of the button hole, the hooked rod descending simultaneously through the button hole. As the needle begins to return its thread is looped "so as to be caught " by the hooked rod and drawn up with the form of a loop over " the edges and to the top of the fabric, where it is caught by " the hook on the vibrating arm and carried off the hooked rod. " As the needle arm continues its descent the vibrating arm by " its forward movement slackens the loop to such a degree that " the needle as it descends can pass freely through it and pene- " trate the fabric, the vibrating arm moving further forward and " dropping the loop, which is now secured to the top of the fabric " both by that portion of the thread carried down by the needle " and that portion drawn after it in its ascent." " Two threads " may be used without changing the construction of any of the " parts above specified, excepting that of the hooked needle or " rod, which must have a second hook to catch the second thread, " which should be so conducted from a spool or bobbin below " the work plate as to be caught by the said hook and drawn in " the form of a loop through the loop of the thread from the " needle, and drawn with the latter loop over the edge of the " fabric, and to be caught and spread by the hook on the vibrat- " ing arm along with the latter loop, that the needle may pass " through it also."

The second arrangement, which refers to the use of two threads, is somewhat different. Here are provided, under the bed plate of the machine, a "curved looper," and a "curved loop holder." The former has two eyes near the end through which passes the under thread. The action of this last arrangement is as follows :— " As the needle descends it penetrates the fabric and carries with " it the needle thread, but in the act of descending the needle " with its thread passes in front of the under thread, which is " held by the looper in a proper position for the purpose. As the " point of the needle enters the fabric the looper begins to " descend, carrying with it the under thread, the needle and " looper arriving at the limit of their downward movement " simultaneously. The needle then rises slightly, looping its " thread at its side beneath the fabric so that it may be caught " by the loop holder, which draws it over the point of the looper. " The needle then rises from the fabric and the looper also rises

" so that its point shall enter the open loop held by the loop holder. The looper continuing to rise carries the under thread beneath one side of the loop of the needle thread, and the loop holder drops the latter thread and moves back to its original position. When the looper reaches its position the under thread will be drawn across the path of the needle, presenting an open loop through which the needle may again descend, the opening of the loop being increased by the movement of the fabric. The needle again descends in front of the under thread, the looper also descending the instant the needle has pierced the fabric, and both simultaneously reaching the limit of their downward movement; the needle then ascends so as to loop the thread at its side, the loop holder carries the same over the point of the looper, and the operation proceeds as before."

[Printed, 1s. Drawing.]

A.D. 1863, October 21.—N° 2591.

NEWTON, WILLIAM EDWARD.—(*A communication from Walter Davis Richards.*)—(*Provisional protection only.*)—"This improvement consists in making on the under side of that part of the presser bar plate or foot through which the vertical needle passes, a groove or recess, which will prevent the foot from pressing too much on that particular point of the work. By this construction of presser foot the workman is enabled to turn the work to any angle without the necessity of raising the pressure foot therefrom as heretofore, and without the risk of deranging the loop."

[Printed, 4d. No Drawings.]

A.D. 1863, October 24.—N° 2634.

BROWNE, BENJAMIN.—(*A communication from Richard Mott Wanzer.*)—(*Provisional protection only.*)—An apparatus to be adapted to sewing machines for the purpose of making frills or ruffles. "To the table of a sewing machine the following parts are connected, first, two, three or more spring plates for causing tension on the materials to be united; secondly, an adjustable spring plate for holding down the material, and also for regulating or gauging the width of the pleat. There is also another plate placed crosswise of the last mentioned plate and near to the ordinary presser foot of the machine for separating the

" material of which the frill is to be formed from the material to " which said frill is to be united." A spring plate or pusher presses the extremity of the last named spring plate. This pusher, being actuated by suitable mechanism, pushes forward the material of which the frill is to be formed, so as to form a pleat; it is then drawn back by springs, and as it moves back the needle descends and unites the pleat to the plain piece of material beneath. The ordinary feed motion is dispensed with while using this apparatus.

[Printed, 4d. No Drawings.]

A.D. 1863, October 26.—N° 2645.

WILLCOX, JAMES.—(*A communication from Charles Henry Willcox.*)—The inventor proposes, as a device for preventing the occurrence of dropped stitches, the use of a "needle hole" or "throat piece" having a projecting part on the side next the shuttle or looper. This projection is grooved for the passage of the needle, the side of the needle further from the shuttle or looper being pressed against the bottom of the groove. Thus the loop must necessarily be formed on the side next the looper or shuttle.

According to the second part of the invention, it is proposed to employ a pair of "serrated spring nippers or pincers actuated "by the descent of the needle slide," for the purpose of creasing the cloth for one tuck during the time another tuck is being stitched. "A thin flat piece of metal is situated on the cloth "plate underneath the nippers or pincers, and down close to "which the nippers or pincers descend when in operation, the "object of this piece of metal being to assist the jaws in taking "hold of the cloth to form the crease." The jaws open on rising to allow the cloth to be fed.

[Printed, 10d. Drawing.]

A.D. 1863, November 3.—N° 2713.

ALDERTON, THOMAS WRIGHT.—The chief part of this invention relates to feeding movements, the remainder to a method of driving the shuttle. According to one arrangement of feed motion, all the movements required are obtained in "a four "motion top feed from a cam fixed on the front end of a driving "shaft contained in the fixed arm of the machine, such cam "being enclosed in a box or chamber in the front end of the

" bracket. If a feed in one direction only be required the cam " will have two actuating surfaces only, the one to raise the foot " and the other to give the lateral motion thereto; but when a " duplex feed is required so as to enable the cloth to be propelled " in either of two directions at right angles to each other, the " cam is provided with an additional actuating surface, namely, " one on the side or face thereof which is brought into play when " required, whilst the other actuating surface remains out of " action." The shuttle driver is worked by means of " a three- " sided cam fast on the rear end of the driving shaft, and work- " ing in a cross head on the upper end of a vertical rod inside " the pillar of the fixed bracket. The lower end of the vertical " rod is connected by a link to one arm of a bell crank, the other " arm of which is coupled to the rod of the shuttle driver. By " having a considerable portion of the shuttle cam made con- " centric to the centre of rotation, a pause or dwell will be obtained " in the motion of the shuttle."

Another part of the invention relates to an improvement in the feed motion of Thomas's sewing machine, patent No. 2079, 1855. Its object is "to obtain a duplex feed in that machine in a more " simple manner than has been hitherto effected." For this purpose the rocking shaft which actuates the feeding foot has also a longitudinal reciprocating movement. "The arm of this shaft " which is acted upon by the feed cam is further provided with " adjusting screws each acted upon by a separate cam surface, " and these surfaces are combined to form one feeding cam."

To obtain what is known as the "needle feed," the inventor imparts a lateral play to the needle arm "by means of a cam sur- " face acting upon a tail piece." The arm itself vibrates "upon " a double or universal joint," and receives its up-and-down motion from "a crank in the face of the cam above referred to or " from a groove cut thereon; another groove in the circumference " of this cam gives motion to a looper or shuttle, as the case " may be."

[Printed, 1s. Drawing.]

A.D. 1863, November 4.—N° 2727.

HOWE, ELIAS, junior.—Improvements in sewing machines,
viz.:—

So contriving the feed motion that rows of stitches may be sewn at right angles to one another without turning the cloth.

This is accomplished by means of a small hand reverser which throws the feed lever mechanism out of gear with one part of a horizontal cam and into gear with another part, thus altering the direction of the feed.

"Putting tension to the shuttle thread by placing a spring of "india-rubber at the back or front of the bobbin and within the "shuttle case."

Fitting the shuttle easily in its race, "and at the proper time, "just before and as it enters the needle loop," pressing it up "to the vertical face of the race by a spring or otherwise;" thus obviating wear to the shuttle and securing easy propulsion. Holding the shuttle thread during the tightening of the stitch, paying out the same and regulating it, by means of a "corrugator" and a "thread holder." A portion of this improvement relates to Thomas's patent No. 11,464, 1846. Working the pressure bar and foot by means of a cam on the driving shaft and a lever acting on the pressure bar.

[Printed, 1s. 4d. Drawings.]

A.D. 1863, November 5.—N° 2736. (* *)

NORTHROP, JONATHAN. — (*Provisional protection only.*) — "An improved apparatus for making fringes."

For this purpose a small tin box is used (having a lid at one end to which a needle is affixed) capable of holding a bobbin filled with silk yarn or thread, or other desired yarn or thread. The bobbin "being placed within the said box, and guided by a spindle "also within the said box, and by preference affixed to the lower "end thereof, one end of the said yarn or thread is passed through "a hole pierced in the side or periphery of the box and afterwards "through the eye of the needle afore named. The apparatus is "now ready for work, and the bobbin being filled with as much "yarn or thread as may be required to make the fringe of one "shawl or of one article requiring such fringe, the workman is "enabled to make continuously the fringe of such shawl or "article (the thread or yarn on the bobbin being of course con- "tinuous), and this more speedily and with less material, in "consequence of there being no waste, than by the ordinary "plan, viz., a simple needle with cut lengths of silk yarn or other "thread."

[Printed, 4d. No Drawings.]

A.D. 1863, November 6.—N^o 2764.

NEWTON, WILLIAM EDWARD.—(*A communication from Walter Davis Richards.*)—The first part of this invention refers to the production of the double loop or chain stitch. In this instance this stitch is made by means of “two needles or loopers.” They are worked by eccentrics in such a manner that the lower needle is carried forward on one side of the upper needle as the latter is ascending, and is carried backwards on its other side as the upper needle is descending, and thus passing in a curve or eclipse completely round the point of the upper needle. The second part refers to the patent granted to Alfred Vincent Newton, and dated 11 October 1862, No. 2749; and provides a means by which this machine may be altered from the shuttle stitch to the above described chain stitch at pleasure. Another part explains a machine, also to make the chain stitch, which works with a needle and looper and two threads. “The looping or securing stitch is “formed below the table by means of a looper, which has a “peculiar reciprocating motion communicated to it,” so that it is caused “not only to advance but also at the same time to rock on “its centre, so that the upper needle in its descent may pass first “on one side and then on the other side of the looper.” A portion also refers to the presser foot and provides that it shall be grooved on the under side, “to prevent the foot from pressing too “much on that particular point of the work.” Moreover, the work is thus more easy to turn.

[Printed, 2s. Drawings.]

A.D. 1863, November 7.—N^o 2772.

CLARK, WILLIAM.—(*A communication from Jerome Burge Secor and William Henry Butler.*)—“The object of this invention “is to obtain a loop check which will work equally well for all “kinds of work, and which can be applied, at small expense, to “machines now in use; and to this end it consists in providing “a recess in the lower part of the inner face of the bobbin ring, “and furnishing the said ring with a hook or tooth projecting “over a portion of the said recess in such manner as to stop the “outer portion of the loop in its passage over the said bobbin.”

[Printed, 6d. Drawing.]

A.D. 1863, November 7.—Nº 2774.

PRINCE, ALEXANDER.—This invention relates firstly to sewing machines wherein loopers or shuttles are used, and consists in so dispensing with all cams and cam movements as to enable the looper or shuttle to be driven by the direct action of the crank shaft.

In the second part the use of coiled springs or weights for the purpose of driving sewing machines is proposed. The third part refers to the guides used for double hemming and binding. The improved guides are “attached to the bed plate or the head “ of the machine, and are formed of metal or other hard material, “ the sides or edges of which are first bent over towards each “ other at one end slightly, but at the other end to such an extent “ that the edges meet at the centre, or nearly so, the edges pre-“ senting a tapering or oblique line with regard to the central line “ of the strip; after which the narrow end is again completely “ doubled together, but leaving a narrow space between all the “ folds, the opposite end receiving only a curvilinear and open “ bend.”

[Printed, &c. Drawing.]

A.D. 1863, November 14.—Nº 2842.

BINNS, JOSEPH PICKLES.—(*Provisional protection only.*)—This invention relates to machines in which a needle and shuttle are used. By means of his improvement the inventor is enabled to sew tubular or hollow work, as well as ordinary sewing.

The inventor says “ I dispose the supporting arm, needle carrier, “ cranked needle lever, and shuttle precisely as heretofore, but “ the chase in which the shuttle is supported and moves is formed “ in a piece partially detached from the table, that is to say, “ a slot or opening is cut in the table on each side of the shuttle “ race; these slots proceed from one side of the table and pass “ across the table to a greater or lesser extent according to the “ length of tube or hollow piece it may be desired to sew, the “ table being made broad in like proportion; the shuttle is thus “ carried within the hollow work it is desired to sew.” The feed wheel and presser foot are suitably disposed to assist the work, and a second presser foot is employed to hold the material down while the needle rises from the loop.

Another part of the invention relates to "the foot or feed presser, and consists in the application of a swivel thumb-piece to the top of that instrument, which acts as a stop when the presser is raised, and is so connected with the spring which forces the presser downwards that the tension of the spring shall be but slightly or not at all affected by being moved from the upward to the downward position, or vice versa."

[Printed, &c. No Drawings.]

A.D. 1863, November 14.—N° 2845.

HUGHES, EDWARD THOMAS.—(*A communication from Jean Louis Thenen.*)—The first improvement comprised in this patent relates to the kinds of shuttles known as "race shuttles" and "rotary" or "revolving shuttles," to which latter the inventor adds a "circular or spiral shuttle holder" to facilitate dismounting, &c. The reel is held in the shuttle by "hinged or folding pieces of steel." The shuttle is provided with a "distributing rod or bar, to facilitate the equal unreeling of the thread, in combination with a guide eye to conduct the thread to the tension." The reels are constructed with "centres" instead of with "points." The shuttle, whether "race" or "rotary" is fitted with a "curved or spiral tail," by which it is exclusively driven. Thus the loop is enabled to pass freely, without interruption. Another part provides, in the following way, against accidental breakage of the needle. This "needle guard" consists of "a trans-perforated or other suitably shaped instrument," which "by a partial rotation or oscillation grips upon the needle and securely holds it in its desired position until the shuttle point has passed the needle, then the return motion of the instrument releases the needle and leaves it free to complete its motion." By means of set screws applied to the needle bar slide box, "the position of the needle relatively to the side or wall of the shuttle race" may be varied. The presser foot is lifted and turned away from the needle in the following manner. A spiral or semi-spiral slot is formed in the presser bar slide box, in which a tongue or stud on the presser bar runs, "so that the presser bar by being raised will at the same time be turned about by the operation."

To avoid friction, noise, and wear, as much as possible, cams and cam shafts are dispensed with, the inventor employing in

their place, his "improved system 'crank motions' working on
"noiseless or nearly noiseless centres."

[Printed, &c. &c. Drawings.]

A.D. 1863, November 24.—N° 2955.

LEWIS, JAMES.—Driving sewing machines by spring power, such as is used in clockwork. If an ordinary spring barrel be connected by a train of wheels to the driving spindle of a sewing machine, it will be found that "this power would last for so short a time that it would be practically almost useless." To remedy this defect, the inventor combines two or more springs and barrels together so "that they shall act upon the same train of wheel and keep them (and consequently the machine) in motion a proportionately longer time, according to the number of springs and barrels that may be employed."

[Printed, &c. Drawing.]

A.D. 1863, November 26.—N° 2972.

THORP, JOHN.—Marking patterns "upon straight or gored skirts" to serve as a guide for sewing and embroidery. The invention consists in using tapered or conical rollers with the required design engraved thereon, which rollers "are made to rotate, and being pressed against the cloth leave an impression of the design thereon, the roller being fed by a suitable inking roller." The marking roller is carried by a "radial bar or fixing turning upon a fixed centre."

[Printed, &c. Drawing.]

A.D. 1863, November 27.—N° 2982.

BATEMAN, JAMES, and BATEMAN, DANIEL.—The object of this invention is to perform "carved or circular work or straight lines of stitches at any desired angle to each other" without altering the position of the material. This is accomplished by the following apparatus:—The needle bar is placed within a hollow cylinder, which cylinder also supports the presser foot inside it by means of a fixed "centre pin." The presser bar is slotted to reciprocate vertically on the "centre pin," and is continued upwards to the top of the hollow cylinder, where it is acted upon by certain cams or levers. By turning the cylinder round, or partially so, during the process of sewing, curved or other lines of stitching may be produced, because the feed motion

is fixed within the cylinder. The apparatus for actuating the feed, above the cylinder, is not affected by the revolution of the cylinder. "Howe's feed motion" may be similarly applied.

[Printed, red. Drawing.]

A.D. 1863, December 1.—N° 3020.

COCHRAN, SAMUEL BEACH—(*Provisional protection only.*)—Adapting "a steady and adjusting pin" to binders for sewing machines, which pin "fits into a hole in the bed or cloth plate of "the machine, whereby the current position of the binder and "the adjustment of the position of the hooks thereof with regard "to the needle is at once determined." "In lieu of the pin "above referred to, a slide or clasp may be employed fitting on "to the presser foot, and connected also to the upper hook."

The system for holding the needle is as follows:—"A hole is "drilled in the needle bar of a size in accordance with that of "the shank of the needle, and in order to ensure the proper "position of the needle a piece of wire of the size of the needle "shank is inserted into this hole, so as to fill or partly fill the "space not required by the needle." A set screw holds this wire in position. "On one side of that part of the needle bar which "holds the needle a groove is cut, and into this groove is inserted "a spring or hinge piece, and round the needle bar a thread is "cut, upon which a nut works. When this nut is at the top of "the spring or hinged piece the needle can be placed in position "or removed; and when the nut is screwed down towards the "lower end" the "spring or hinged piece" firmly grips the needle. The shank of the needle is made flat on one side "so "that it will form a guide when in connection with the spring or "hinge piece."

The inventor proposes "to dispense with any vertical motion in "the feeding plate, whereby a feed as effective as, but more simple "than the well known four-motion feed is obtained. In carrying "out this part of the invention it is proposed to combine with a "feeding plate having a horizontal reciprocating motion only, a "lifting plate or plates having a vertical reciprocating motion "only, whereby the material or cloth is lifted from off the feeding "plate when the feeder is making its return stroke."

A spring "take up," which holds the surplus thread until "required to form the stitch, in combination with a tension apparatus, or two sets of tensions without the spring, are used.

The remainder of the specification refers to various modes of adjusting the joints in the several working parts of sewing machines, to compensate for wear. Joints consisting of "two 'sockets and two balls or centre points'" are described, and mention is made of the application of "adjustable conical collars" to the bearings of shafts.

[Printed, 4d. No Drawings.]

A.D. 1863, December 16.—N° 3181.

NEWTON, ALFRED VINCENT.—(*A communication from Isaac Merrit Singer.*)—"Improvements in sewing machinery." The chief part of this specification relates to various forms of feed mechanisms. By one method, the length of stitch is regulated by the interposition of wedges between the feed bar and its cams; "by another combination of adjustable inclines and sliding "bars the feed may be caused to act either longitudinally of the "machine or at right angles." According to another arrangement,—"a combination of two disc guides, one for determining "the length of traverse and direction of feed, and the other for "giving a semicircular sweep to the feed bar, the feed may be "directed at any angle from the needle." "A further modification of feed arrangement consists in making the parts which "perform the part of the table in supporting the work also "act as the feed. To this end two hollow cylinders are mounted "horizontally and loose upon a fixed hollow sleeve shaft carried "by brackets from the bed plate of the machine, the ends being "only a sufficient distance apart to allow of the needle passing "between them, but one is made capable of sliding back to give "access to the interior when required. At these adjacent ends "raised roughened surfaces are formed around each cylinder. "Motion may be communicated in the same or in contrary directions to either portions, separately or to both of the supporting "feed cylinders simultaneously by means of two friction wheels "or rollers carried loosely on fixed stud axles from brackets on "the frame, but made capable of sliding in and out of gear or "contact. . . . Through the hollow sleeve shaft a rod is "passed, which receives a traversing motion from a cam. To this "rod (a slot being cut through the sleeve shaft) is attached the "driver or other instrument for securing the loop of the needle." Feed mechanisms consisting of a combination of a vertical and

a horizontal feed wheel, or "three horizontal feed wheels arranged "on the top of the table of the machine around the needle as a "centre" are also described. Button holes are to be fed by a bar fitted with a guide plate, having a slot, "straight for a short "distance and curved at its end."

"For laying braid ready to be sewn, a guide is made to slide "edgewise into the presser foot, such guide having a suitable "arrangement of passages through it horizontally and vertically "to hold the braid at proper tension. The corner of the needle "bar being made to draw the braid from the spool, it will be laid "and sewn on at an equable tension."

"The invention further relates to the employment of an "oscillating shuttle; this shuttle is somewhat circular in form, "having a projecting lip as a guide in passing the loop; it moves "in a circular flanged race of twice its diameter. The flange of "the race is cut of suitable form to allow of the passage of the "needle, and to assist in opening out the loop. The shuttle is "supported or carried by pins, or a continuous piece projecting "into the race from a circular head; this head is carried in bearings, and rocked by a connecting rod from some convenient "shaft of the machine. The thread is brought from the shuttle "through a series of holes formed at its outer edge to give the "necessary friction, and leaves the shuttle at the centre of "motion."

The thread, after leaving the spool, passes between two friction surfaces, so arranged that, as the needle arm rocks a portion of thread is drawn off the spool. A "supplementary rocking lever" actuated by "a tappet on the heel of the needle bar" is provided to take up the thread and assist in tightening the stitch.

A button hole stitch is made as follows:—"The vertical needle "is caused to descend and pass through the fabric near the edge "of the button hole, and a shuttle is passed through a loop "formed below, laying a thread therein; the needle now rises; "and the shuttle goes back to its place. The needle next receives "a lateral motion, and moves down past the edge of the work, "when the shuttle again passes through the loop. The needle "and shuttle threads are now held over the edge of the work "by suitable instruments, in order that the needle, in its next "descent, may pass through its own loop past the edge of the "work, and through the loop of the shuttle thread."

[Printed, 5s. 4d. Drawings.]

A.D. 1863, December 19.—N° 3211.

JUDKINS, CHARLES TIOT.—(*A communication from Richard Mott Wanzer.*)—This refers to the following improvements in sewing machines, namely,—A “brake board” hung on to the table of sewing machines in such a way that its point is over the back or front of the fly wheel, according to the direction in which the wheel is to revolve. This prevents the fly wheel from being rotated in the wrong direction.

“The attachment of a spring of any form on the top of the “radial arm or lever of a sewing machine, or on to the top of the “needle slide;” also an adjustable roller, “to increase or decrease “the power of the spring, thereby increasing or decreasing the “force of the needle entering the material.”

A new form of “binder” in which a portion is made adjustable to take any width of binding. “It has also an adjustment at “right angles to bring it immediately under the needle.”

[Printed 8d. Drawings.]

A.D. 1863, December 21.—N° 3221.

BAYNES, ROBERT.—“Darning stockings and other fabrics.”

The inventor carries out his object by compressing the fabric to be darned between two dies, which dies are grooved in such a manner that the needle carrying the thread is simply “passed “straight through the several passages in these dies and so effects “the darning.”

[Printed, 1s. Drawing.]

A.D. 1863, December 26.—N° 3271.

BOESIGER, JOHN VICTOR.—(*Provisional protection only.*)—The sewing machine described by the patentee as his improvement stitches by means of a straight needle and a shuttle. “The arm “or cloth supporting portion of the machine” is made partly of wrought and partly of cast-iron. The driving shaft is carried horizontally “in the overhanging bracket arm,” and has, at its near end “a cylindrical grooved cam,” which actuates the shuttle. The face of this cam also works a small lever cam for the purpose of taking up the slack of the needle thread. “The eye of the “needle is made much further from the point than heretofore,” and “the groove on that side of the needle next the shuttle is

" carried down closer to the point than in the ordinary needles." An adjustable plate provided with vertical grooves, into which the needle enters, is fitted inside the shuttle race. By means of this contrivance the loop is properly presented to the shuttle. "The shuttle is made to work with its point outwards or from the machine, so that after it has passed through the loop of the needle thread, and when the material is being fed along in line with the arm for the stitch, the thread will extend nearly in a direct line with the motion of the material to the shuttle, in place of forming an acute angle," thus saving strain. The drag of the shuttle thread is equalized by a hole in the shuttle and a curved wire, and certain projections are fitted to the shuttle race to prevent vibration. Two separate feeding plates are provided, each of which feeds at right angles to the other. They are worked by cams. The needle holder is worked by a grooved disc at the front end of the driving shaft.

[Printed, 4d. No Drawings.]

A.D. 1863, December 29.—N° 3292.

CUMMING, JAMES.—(*Letters Patent void for want of Final Specification.*)—The object of this invention is to prevent sewing machines from being driven in a wrong or reverse direction. Accordingly the driving band of the sewing machine is caused to press against one end of a lever, and in so doing keep the other end of the lever elevated. Should the band attempt to travel in the opposite direction the elevated end is immediately depressed against a fixed abutment, and so stops the machine.

[Printed, 4d. No Drawings.]

1864.

A.D. 1864, January 2.—N° 11.

BONNEVILLE, HENRI ADRIEN.—(*A communication from Alfred Neymark.*)—Improvements in shuttle bobbins. The invention consists in making bobbins of wood, bone, or card, instead of metal as hitherto. Thus the bobbins can be manufactured cheaply and sold with the thread ready wound.

[Printed, 4d. No Drawings.]

A.D. 1864, January 2.—N° 12.

BONNEVILLE, HENRI ADRIEN.—(*A communication from Alfred Neymark.*)—The inventor claims as his improvement “the mode of carrying an ornamental article, such as chenille, braid, or other trimming, alternately right and left of a needle of a sewing machine” by means of a rocking lever worked by a cam, in such a manner that the needle does its work without touching the trimming, which “is thus fixed only without being sewn.”

[Printed, 10d. Drawings.]

A.D. 1864, January 4.—N° 25.

JOHNSON, JOHN HENRY.—(*A communication from Isidore Sollier and Baron Gerard Dedel.*)—(*Provisional protection only.*)—This is for a machine intended to stitch leather and other heavy materials. The stitch produced “is the single thread chain or tambour stitch, and a hooked needle is employed into which the thread is placed after it has penetrated the material” by means of a “thread distributor.” This thread distributor is carried at the upper end of the horn which supports the work. A tension apparatus and a thread bobbin are contained within the horn which, moreover, rotates round a centre in the bed plate of the machine “so as to afford facility for turning the work in any desired direction when stitching. An arrangement is also provided by which the horn may be warmed by a small lamp or gas jet, and a “horizontal table or platform” may also be added to it by screws or otherwise.

[Printed, 4d. No Drawings.]

A.D. 1864, January 6.—N° 42.

CUMMING, JAMES.—(*Provisional protection only.*)—The inventor proposes to prevent sewing machines “having a backward motion imparted to them” by the use of a lever stop “so placed with reference to the wheel that one end of the lever rests against a strap or band as it passes around the wheel. When the wheel is rotating in the right direction it keeps the lever stop a little removed from the shortest line between the surface of the wheel and the centre on which the lever stop turns, but should the wheel receive a reverse impulse it brings the lever stop in towards the shortest line, and so locks or wedges the wheel.”

[Printed, 4d. No Drawings.]

A.D. 1864, January 21.—N° 168.

JOHNSON, JOHN HENRY.—(*A communication from the Grover and Baker Sewing Machine Company.*)—“This invention relates to “the driving and actuating of certain parts of sewing machines,” and is divided into three parts as follows:—

(1.) Driving one shaft from another, where two shafts are employed and are required to work isochronously. This arrangement consists in connecting the crank pin carried on one shaft with that carried on the other by means of a connecting rod sliding longitudinally through a swivel fulcrum at its centre. This swivel fulcrum is attached to the framing and rocks on a centre of its own. Or the rod may be slotted longitudinally and work “over “a fixed pin or antifriction roller;” thus dispensing with the swivel.

(2.) “Transmitting a differential vertical reciprocating motion “to the needle slide or carrier from the needle actuating shaft of “the machine.” This is accomplished in the following way. At the front end of the driving shaft is a disc, on the face of which there is a slot, either “straight, radial,” or curved.” In this slot works “a crank pin carried by a rotating disc, on the inner end of “a short spindle, the axial line of this short spindle being eccentric “to that of the needle-actuating shaft.” “To the crank pin “above referred to is a jointed connecting rod or link, the lower “end of which is jointed to the needle slide or carrier.” Thus it is evident that the required movement may be obtained and adjusted as required.

(3.) This is a modification of the last described contrivance, and consists in the use of a “slotted disc” and a “stationary race “cam” to effect the same object. The needle carrier derives its vertically reciprocating motion from a pin which works in the slot of the rotating disc. This pin also projects into the groove on the face of the stationary cam and thus derives its differential motion.

[Printed, 1s. 2d. Drawings.]

A.D. 1864, January 25.—N° 215.

LINDLEY, LEONARD, and TAYLOR, FREDERICK.—“Ma-“chinery for sewing, whipping, embroidering, and fringing.” The inventors describe their invention thus:—“In constructing “machines more especially suitable for sewing over or whipping

" the edges of fabrics, we combine with the perpendicular needle
" of a sewing machine, which we here call (No. 1), a needle
" (No. 2) to pass through loop of needle (No. 1), and a needle
" (No. 3) working over the upper surface of the fabric to pass
" through the loop of needle (No. 2). To the needle of (No. 2)
" a curvilinear motion is given, by which, after its point has
" passed through the loop of needle (No. 1), it is made to ascend
" to the upper surface of the fabric at a short distance from and
" by the side of needle (No. 1). The needle (No. 3) carrying
" a separate thread is made to pass through the loop of needle
" (No. 2), and to remain forward until the needle (No. 1), in
" descending, passes through its loop." " If it is desired to pro-
" duce a fringe on the edge, it is conveniently done by adding to
" the machine a hook to catch the thread of the needle (No. 3)
" and hold it out from the edge of the fabric in a loop of the
" required length, the said hook being caused to free itself from
" its old loop and again to catch the thread of its needle at each
" stitch or motion."

Another arrangement of machine suitable for sewing over or
" whipping the edges of fabrics, and also suitable for embroider-
" ing," is described in the Provisional Specification. A curved
" needle is employed, which when used for embroidering, is made
" to penetrate and pass through the fabric in such a manner that
" the point will appear and the loop be formed on the same side
" of the fabric as that on which it entered; the loop thus formed
" is then conducted by a hook or guide, so that the needle at
" its next operation will pass through it before entering the
" fabric."

[Printed, in 8d. Drawings.]

A.D. 1864, February 5.—Nº 302.

MENNONS, MARC ANTOINE FRANÇOIS.—(*A communication from Joseph Weatherby Bartlett.*)—This invention relates to the general construction of an improved sewing machine. The needle works upwards from under the cloth table and the looper acts from above. The needle is carried by a bar worked by a pin on a crank disc, carried at the end of the driving shaft. The head of this needle bar is toughened so that it is enabled to act as a feeder in addition to its usual duty. It is also provided with a curved slotted plate in which it engages by means of a screw.

By altering the position of this slotted plate the length of stitch may be regulated. The thread is supplied to the needle from a bobbin carried on the needle bar. The presser foot is carried, as usual, at the end of the projecting arm above the table, and is held down by a spring. The looper, which is supplied with thread from a bobbin carried on the arm, is worked by means of a cam on the end of the driving shaft opposite to the end carrying the needle bar disc. The looper has a compound motion communicated to it by means of a set screw pressing against the arm of the machine; that is to say, the cam furnishes the lateral motion, and the set screw the motion at right angles. Thus the loop is brought into such a position that the needle, in making the next stitch passes through the loop. When only one thread is to be used, this looper is removed and another, suited to the work, is substituted; the action of which is however precisely the same.

[Printed, *i.e.* Drawings.]

A.D. 1864, February 5.—Nº 304.

COOPER, JOSEPH.—(*Provisional protection only.*)—“The inventor provides the “band wheel” of a sewing machine with a “projecting collar with a screw for adjusting it on the crank “axle.” He also provides the face of the “band-wheel” with a groove, in which works a pin or stud on the end of a lever. The other end of this lever is “double jointed, or provided with “universal jointing,” by which it is secured to the end of “a right-angle lever (ventured to the under side of the bed plate).” The looper is attached to the other end of the “right-angle lever “by a set screw arrangement and guide for the looper, being “provided at its blank end with an adjusting screw for regulating “the action of the same.” Thus the inventor is enabled to regulate the throw of the looper, and this he does by “unscrewing “the adjusting screw of the band wheel, and shifting the posi-“tion of the said band wheel in relation to the groove on its “face, also by shifting the pin of lever in said groove, the guide “for the lever being adjusted when necessary.”

[Printed, *i.e.* No Drawings.]

A.D. 1864, February 8.—Nº 334.

DE STAINS, VICTOR, and ROGERS, THOMAS.—Relates to a needle-threader for machine or other needles, and to an im-

proved hammer. The needle threader consists of a bar of ivory or hardened caoutchouc slit down the centre, nearly to the end ; the small portion left intact acting as a kind of spring hinge. A groove is formed in the upper and lower half, at right angles to the direction of the slit, which grooves, when the halves are pressed together, form a hole for the passage of the thread to the eye of the needle. The needle is held in a groove formed on the side of the instrument at right angles to the slit and to the thread hole ; and it is held in its place by a flat spring. To ensure that the eye of the needle shall be in line with the thread hole, the point of the needle is caused to rest on the head of the set screw, which holds the two halves together, and which is made wide and flat for the purpose.

The hemmer or feller consists of a piece of steel formed into a spiral to turn over the fabric, and carried by the presser foot " by being slid in between jaws in the bottom of the pressure foot for that purpose." The part which immediately engages with the presser foot is flat on the cloth, but the part carrying the spiral is at an angle to the plane of the table so that it may " fit " the bevel " of a " ridge plate which in fact forms an inclined " plane for the work to pass over." "The top of this ridge forms a convenient edge for doubling over the fabric. The " ridge plate " is fixed to the table by set screws."

[Printed, 10d. Drawings.]

A.D. 1864, February 22.—N° 447.

GEE, GEORGE PHILIP, and GOSLING, WILLIAM HENRY.—Machinery for sewing over the edges of fabrics, and " forming on " such edges what is also technically called a pearl stitch." This stitching is performed by means of a free needle and thread. The needle being held in a pair of nippers carried by the upper needle bar, it is passed down through the fabric ; it is then seized by the lower nippers, moved from right to left under the material and then passed up, through an aperture in the table, at the edge of the material. It is then grasped by the upper nippers which have also travelled from right to left in order to be ready to receive it. It is next carried by the upper nippers from left to right, to make another stitch. This is the principle of the action of the machine, but there are added certain contrivances to assist in forming the required stitch. A rotating wheel called by the inventors a

“ twist wheel ” is placed horizontally under the table. It has a hook sliding on one of its arms or spokes, “ advancing and “ receding in a direction to or from the axis for the purpose of “ catching (or what is technically called picking ‘ up ’) the ‘ loop,’ ” formed by a slight raising of the needle after descending, “ and “ conveying the superfluous end of the thread (the reverse end “ of that which is through the eye of the needle) and laying on “ or in a groove near the periphery of the twist wheel ready for “ the succeeding stitch.” A “ twister,” which consists of “ a crochet hook ” on the end of a “ small shaft of steel ” takes hold of the thread “ when in a vertical position, and immediately “ after it has been pierced through the cloth, and when the needle “ is at its lowest point.” Then aided by a “ tightener ” which consists of “ bevel hook,” it presents a loop to the next descent of the needle, “ so that one stitch in its formation interlocks “ into another stitch, and so on for any number of stitches.” “ By reversing the motion of the twister which will turn the loop “ in the contrary direction, and at the same time feeding in the “ opposite direction ” the “ true button-hole stitch is effected.”

[Printed, 1s. 10d. Drawings.]

A.D. 1864, March 4.—N° 544. (* *)

SLATER, DANIEL.—“ Certain improvements in cabinet furniture, and fixtures attached thereto.” One improvement consists in fitting sewing machine cabinets with sliding doors, which meet in the middle and are locked by one bolt ; they are formed of slats, “ fastened at the back by hinges, strips of wire gauze, or “ cemented on cloth in any way so as to attach them in one continuous sheet ;” they pass back into grooves parallel to the sides. The slats are sometimes strengthened by back slats, the metallic strips or cloth being put between them. A second, “ in constructing doors of cabinets with fretwork, backed up with “ glass panels of any colour.” A third in new forms of flush handles for drawers and doors.

[Printed, 8d. Drawing.]

A.D. 1864, April 12.—N° 921.

WILSON, WILLIAM NEWTON.—(*A communication from Charles Goodwin.*)—(*Complete Specification but no Letters Patent.*)—This machine forms what is termed “ the loop embroidery stitch, by “ the combined action of a hook needle and tubular guide for the

“ hook to pass through, which holds the loop to its position on “ the material, while the ordinary pressure foot holds it down.” There is “ also a twist movement given to the loop by a revolving “ collar and pinion, the thread passing through a hole in the said “ collar, which hole is eccentric to its axis. The thread is passed “ up through the hole in the pinion and collar when the hook “ needle pierces the cloth, by passing through a hole in a pres- “ sure collar, which collar presses on the material between the “ claws of the ordinary pressure foot. By the revolution of the “ pinion the thread is lapped over the hook needle, when it “ ascends, and brings up a loop to the surface of the material. “ The four-motion feed advances the cloth the required distance “ for the length of a stitch, when the pressure collar in connec- “ tion with the hook needle lays down a loop on the surface of “ the cloth, when the needle again descends and pierces the “ material (within the before-mentioned loop), and by the action “ before described of the revolving pinion the thread is again “ lapped around the hook needle. It again ascends through the “ loop and pressure collar, when the material is again advanced “ by the feed motion, and the loop is laid down and held by the “ pressure collar until another loop is pulled up through the “ previous loop and tubular collar by the hook needle, and so “ on.”

[Printed, 8d. Drawing.]

A.D. 1864, April 14.—N° 939.

BROWETT, FREDERICK.—“ Hand frames for manufacturing “ embroidered trimmings.” Embroidered trimmings of gimp, &c. “ have heretofore been made upon a solid wooden roller having “ pins or pegs inserted therein for forming the pattern,” which method presents many difficulties. The present invention con- sists in the use of “ a hollow frame or hoop of metal with holes “ or perforations through the same between the pins or pegs fixed “ thereon for forming the pattern of the embroidery. The “ worker is thus enabled to pass her needle through and stitch “ the threads together at the points of intersection.”

[Printed, 8d. Drawing.]

A.D. 1864, May 5.—N° 1134.

EVANS, THOMAS.—(*Provisional protection only.*)—“ These im- “ provements relate to the mode of making embroidery by means

" of throwing one or more threads of silk, wool, or other like materials to and fro across the path of the needle in ordinary sewing machines, and thus interweave the said thread or threads with the sewing threads, as shewn and described in George Mumby's Specification, No. 1618, A.D. 1857. The details of the Specification refer to improvements in the working of the "vibrating carriers or arms," to the adaption of this method to machines having the feed motion below the surface, and to "an improved mode of constructing the slide, lever, and fingers used in the machines described in Joseph Willcock's Specification," No. 2051, A.D. 1862.

[Printed, 4d. No Drawings.]

A.D. 1864, May 14.—N^o 1225.

CRAVEN, PHINEHAS.—"Manufacture of fringes." The invention has for its object the manufacture of fringe by machinery similar to an ordinary sewing machine. Its operation is as follows:—The needle in descending penetrates the fabric requiring to be fringed and the thread it carries is caught by an "angular" hook. This, by virtue of a partially spiral groove on its upper end working in a stud, has a rotary motion, and in the first instance having caught the thread revolves one-fourth part of a circle. "A loop is thus formed, and the needle ascending the hook affixed to the same bar catches one side of the loop. The 'angular' hook now rotates through one-half of a circle and in so doing further twists the loop." At this point a hook placed at right angles to the needle passes through the loop formed, and catching the thread (which is a continuation of that in the needle) from the upper side of the fabric "returns the first-named hook, catching one side of the second loop and now having two threads in its hold." A spring catch relieves the first loop, and this passing over the second loop forms the requisite knot. Scissors and "draggers" now advance; the former cut the fringe and the latter pull the knot tight.

[Printed, 3s. 4d. Drawing.]

A.D. 1864, May 24.—N^o 1294.

CLARK, WILLIAM.—(*A communication from Henri François Timothée Mégraud.*)—"Improvements in apparatus for the manufacture of festooned edging or trimming." "The first opera-

"tion consists in stamping or cutting by means of a machine a strip of material of the desired width, of any suitable length, and of the form to be given to the trimming." This strip, which is the foundation of the trimming, is then impregnated with some gummy substance to impart stiffness. "The second operation consists in submitting the strip or foundation to the action of festooning machines, which are of two kinds, having two or three threads." In the machines with two threads one of the threads is wound on the foundation or strip by means of an arm having an intermittent circular motion, during the intervals of which the second thread contained in a shuttle is wound on over the first. In the three thread machine the inventor employs but one thread for covering the body of the strip and two threads for forming the stitch; these two threads are supplied by two shuttles, which pass alternately on each side of the covering thread, thereby forming a kind of weaving or locking stitch.

[Printed, 4s. 2d. Drawings.]

A.D. 1864, May 25.—N^o 1298. (* *)

PASSMORE, WILLIAM.—(*Provisional protection only.*)— "Making sewing machines, rotary hair brushing machines, electrical apparatus, and lathes, self-acting."

Clockwork machinery is employed for the said purpose, with the addition of a fly wheel to carry a band "an extra slide bracket for support of the fly wheel, and a break for regulating or staying the motion." When greater power than that furnished by a spring and barrel is required, a 'drum barrel with line, weights, and pulleys should be used. "I propose to connect my machine to the machine or apparatus to be rendered self-acting by means of a band or line to be carried over the fly wheel of my machine and the fly or band wheel of the machine or apparatus to be acted upon. When my machine and the machine or apparatus to be acted upon are thus connected, motion will be imparted by winding up my machine with a winch similar to the winding up of clocks. The break before mentioned for regulating or staying the motion consists of a metal skid pan (lined with leather or other substance) attached by hinge to the foundation plate of my machine beneath the fly wheel in such a way that it can be raised (by pressure

" of the foot or otherwise) to catch the fly wheel and thus
" regulate or stay the motion as may be required."

[Printed, 4d. No Drawing.]

A.D. 1864, June 20.—N° 1527.

SMITH, ALFRED.—"Machinery for producing frills and gathered
" work."

In order to form a frill and at the same time attach it to the material the "plain fabric or band is first inserted between the "thicknesses of the work plate where it is formed double, while "the fabric which is to be gathered is placed on the top of the "work plate, where one thickness of the double plate will be "between the two fabrics. The pressing foot rests upon the "fabric to be gathered, and motion is given to the sewing "machine in the ordinary manner, whereupon the pressing foot "moves forward gathering a portion of the fabric to be frilled. "the feed motion of the sewing machine and the pressing foot "now act to drive forward the fabrics, the needle descends, secures "the gathered portion of the upper fabric to the band, the press- "sing foot rises, retreats, and again brings up a gather as before, "and so on." One form of the inventor's apparatus consists of a presser foot, working above the fabric in the usual way, but carried by a vertical bar which rocks on a pivot under the table. Between the pivot and the joint with the presser foot, this bar is joined to a connecting rod worked from an eccentric on the main shaft. Below this connecting rod is a rocking lever, and at one part of the throw of the eccentric, it comes into contact with one end of this rocking shaft and so raises the opposite end, to which a bar is connected. "This bar is formed with a head or button "at top, and passing through an aperture in the work plate rests "upon the under side" of the pressure bar and "overcomes the "pressure of a spring constantly pressing" on the said bar. By another arrangement the inventor makes "the pressing foot work "from below instead of from above," and in this case, of course "the fabric which is placed undermost is that which is frilled." Another method consists in working the presser foot by means of a species of horizontal face cam and pinion combined.

[Printed, 10d. Drawing.]

A.D. 1864, June 21.—N° 1546.

SMITH, ALFRED.—Brakes for sewing machines. The inventor describes two methods of "checking, stopping, and regulating the

" speed of sewing machines." One apparatus consists of brake blocks, encircling the small pulley on the driving shaft, and held between the extremities of a pair of jaws. These jaws are held together by a spring so that the normal position of the brake blocks is in contact with the pulley. Each of the opposite ends of these jaws or levers is furnished with a small pulley, and they are so arranged that by pressing a treadle the pulleys are brought down on the driving band, which was previously loose on the wheel. Thus the band is tightened and the machine starts, because the same movement which brings down the pulleys to tighten the band, serves to loosen the pressure of the brake blocks on the driving shaft. The other contrivance described, is a combination of a "wedge break" and an ordinary brake block. The latter is carried on the "wedge break" and is pressed against the pulley by springs. As the wedge brake advances towards the wheel, the brake block is pressed against it by its springs more or less forcibly, till the wedge is brought up finally to stop the motion of the wheel.

[Printed, 8d. Drawing.]

A.D. 1864, June 24.—N^o 1594.

NICOLL, BENJAMIN.—" Improvements in the manufacture and " ornamentation of garments." " The various processes em- " ployed in the manufacture of such articles are effected by a " combination of machinery consisting of several parts, but these " are all worked by the same prime mover and from a common " shaft." The first operation to be performed in the formation of garments, is the cutting out of the cloth. This is accomplished by the inventor by means of curved cutters " of the exact " size and shape of the piece to be cut out," carried on a drum, revolving over a travelling table. A pile of several thicknesses of material is operated upon at once, and the drum is so arranged that the cutting edges are preserved from actual contact with the surface of the table. The pieces are expelled from the cutter by springs, or are removed by hand. In the manufacture of shirts and collars it is sometimes necessary to turn over the edges of the fabric before stitching it. The machine for this purpose consists of a hot plate, heated by gas or otherwise, and having a recess in its surface corresponding to the size and shape of the article. The piece of fabric or blank is laid on this recess, after

having been slightly damped. A thin pressing plate is then brought down upon it, which forces the fabric into the recess, and causes the edges to turn up slightly. These edges are then folded down by means of a "series of lateral slides." "To unite and press together two pieces of fabric whose edges have been turned over so as to form, for example, the two sides of a collar or wristband, and prepare the article for stitching," the two pieces are placed, with their turned-in edges face to face, in a mould or matrix of the size and shape of the pieces, and are there united by a little starch. "This mould may or may not be heated, and a pressing plate, also heated or not, is brought down upon the two pieces of fabric, such plate fitting accurately inside the mould."

According to one arrangement of the inventor's sewing machinery, he proposes "to combine together in one framing or support a number of sewing machines in such a manner that they shall all be worked simultaneously and in concert." This is accomplished in the following manner:—"Upon a smooth or polished bed plate or table is bolted a long vertical bracket or standard provided with a cam and cam shaft at the top and bottom thereof, both these shafts being driven simultaneously and in concert by bevel gearing. These two cams give motion to three parallel bars, which extend from top to bottom of the main vertical standard above referred to." At regular intervals above one another in front of this standard, and carried by it, are numerous tables or cloth plates. Each of these tables is furnished with needle, shuttle or looper, and feed apparatus; in fact, each constitutes a perfect sewing machine. All the needles are carried by one bar, the middle one of the three previously mentioned. "The feeding device of each sewing machine is worked from the second parallel vertical bar," while the remaining bar serves to work the series of shuttles or loopers. The various pieces of work are placed in wooden clamps, carried by a vertical support standing upon and capable of sliding freely in any direction over the smooth or polished bed plate." At the top and bottom of this upright there may be fitted, if desired, suitable templates, bearing against a fixed or adjustable guide.

The tension apparatus employed in these several sewing machines, and which is equally applicable to others, "consists in imparting a variable or adjustable friction to the thread lifter, such friction being applied to the periphery of a friction disc

" on the axis of the lifter." The friction is obtained by a lever break pressed on the periphery of the disc by an elastic band or spring. The band or spring is attached to a screw which may be moved further from or nearer to the fulcrum of the lever, thereby varying the friction. To finish the edges of collars, &c. "which are suited to receive binding," the inventor says, "I first stitch a narrow slip of colored or plain fabric on to the edge of the article, bringing the edge of the article and the edge of the strip or binding even with each other, or nearly so. The opposite edge of the strip or binding is turned over in the form of a half hem, and when the strip has been thus attached, I fold or turn back the strip from the line of stitching already made, and bring it over the edge of the article; I then introduce a second line of stitches through the article, and through the underneath portion of the binding which has just been turned under, taking care that these stitches be as close as possible to the upper edge of the binding without catching it." This work is done by means of the addition of a suitably arranged curved guide to an ordinary sewing machine.

An "improved hemmer" is also described. It consists of "a hook curved downwards, through which the end of the fabric is passed after being turned or coiled by the finger and thumb. Immediately behind this hook there is a curved plate or strip of metal, the end of which is also curved downwards, but not so far as the hook, its object being to keep the edge of the cloth turned well under as it leaves the hook or curler." Sewing machines may also be arranged in horizontal rows, the working parts of which are actuated by "special horizontal parallel bars" as described in this Specification. The work is carried on straight bars or baster plates "attached to the sides of carriages" running on wheels. "In some cases," says the inventor, "where it is desired to have a number of rows of stitching close together, . . . I cause the work to proceed onwards from the first row of machines to a succeeding row, the needles of which are in different vertical planes to those of the preceding row, and thus two or more rows of stitches may be simultaneously introduced into one piece of work according to the number of rows of stitching machines employed." A method of seaming or uniting fabrics is described, in which the edges are joined, the pieces opened out, and the edge "stitched down on the lower piece of fabric by a line of stitches parallel

" to the first." To assist this operation a tapered bar, called an " opener" or " separator," is employed.

To produce ornamental stitching the fabric is stretched on a carriage moving laterally on rails carried on another carriage moving longitudinally on fixed rails. The upper carriage has also a pattern plate attached to it, having the pattern marked out in grooves. In these grooves work antifriction rollers attached to fixed points. " The bottom carriage is moved forward stitch by stitch by means of an adjustable cam and ratchet motion, according to the length of stitch required. The forward motion thus imparted to the pattern plates causes them also to move in a lateral direction by the action of the fixed antifriction rollers in the pattern grooves, and thus the upper carriage and cloth will move in the direction of such grooves."

The apparatus for stitching button holes consists of two parallel vertical needles, carried by one slide, and working in combination with two shuttles or loopers, and a " six-motion feed."

Another part of the invention consists of a novel mode of forming the plaits of shirt fronts, which plaits the inventor terms " false plaits." This " false plait consists of a narrow strip of fabric, the longitudinal raw edges of which are turned under and stitched down upon a plain piece of fabric which forms the foundation or body of the front, the stitches being made at a slight distance inside the turned-down edge, so as to leave the actual edge loose, and thus give the appearance of a plait."

[Printed, 4s. 2d. Drawings.]

A.D. 1864, June 27.—Nº 1609.

THOMAS, WILLIAM FREDERICK.—Working the shuttle of sewing machines. " In order to give motion to the shuttle of a sewing machine, the rod which carries and works the shuttle driver, in place of being caused to slide as heretofore in bearings or supports, is at that end of it on to which the shuttle driver is formed or fixed, caused to rest and slide on a guide rail, and at its opposite end, which is most distant from the shuttle driver, it is suspended from an axis by a link or lever. The rod as heretofore is actuated by a face cam by a pin projecting from the end of the rod that is most distant from the shuttle driver entering the groove of the face cam. The rod being

" thus suspended at one end, and resting at its outermost or " most forward end on a glide rail, presents but little friction, " and is more conveniently put into action by the cam."

[Printed, 6d. Drawing.]

A.D. 1864, June 30.—N° 1632.

KIMBALL, ALONZO.—"An improvement relating to the feeding apparatus, "The feeding dog or roughened piece, which works "in an opening so as to act on the under side of the material, is "fixed on the end of a long lever which is fitted so that it can "slide in a centre shoe arranged to swivel on a vertical pin or "joint, and when feeding in one direction this lever slides in its "shoe, whilst for feeding in the other direction it turns with "the shoe through a small angle. One revolving cam acts on "the lever longitudinally, and another sidewise to produce the "respective movements, whilst a third cam tilts the lever vertically to cause the feed dog to rise and engage with the material "at the proper times, the lever oscillating on a horizontal pin "fixed in the centre shoe through an elongated slot in the "lever."

To enable the feed lever to be acted upon to cause it to feed in the different directions, there is applied a small horizontal "plate lever or quadrant" shifted by an external handle. "A "spring connects the outer point of the quadrant with the feed "lever, and this spring reacts against the feeding cam so as to "return the feed lever after each impulse of the cam. When the "lever is moving longitudinally, the spring acts nearly in that "direction, but when the quadrant is shifted for the sidewise "movement, the spring acts across. A pin on the feed lever "projects into an opening in the quadrant," the edges of which opening act on the pin to prevent the sidewise movement of the lever or the longitudinal movement, as the case may be, according to the position of the quadrant.

[Printed, 10d. Drawing.]

A.D. 1864, June 30.—N° 1634.

BROOKES, WILLIAM.—(*A communication from Albert Francis Johnson.*)—This invention relates to means for "facilitating the "employment of waxed threads for uniting leather or other "heavy fabrics." "By these improvements in sewing machinery

" in lieu of an eye-pointed needle a puncturing awl and an open-
" eyed hooked needle are employed, and with these is combined
" a shuttle for causing the formation of a lock stitch. To obviate
" the necessity of allowing the needle to remain in the fabric
" while the stitch is being tightened, which is fatal to practical
" sewing with a waxed thread, a "take-up" is employed, which
" operates independently of the movement of the needle, and in
" such a manner that while the thread is being conveyed through
" the fabric it shall be slack and subject to no tension."

[Printed, 3s. Drawings.]

A.D. 1864, July 6.—N° 1681.

STURTEVANT, BENJAMIN FRANKLIN.—This improvement relates to the sewing of boots and shoes, and is intended to render it more durable. "The thread is to be looped within the awl holes, " or it may be passed through them, and is to have a peg, either " of wood or other proper material, driven, forced, or inserted " into each hole, so as to either compress or expand the thread " within the hole and against its side or sides in manner to not " only firmly fix or aid in fixing the thread in the hole, but at " the same time to firmly fasten the peg therein."

[Printed, 6d. Drawing.]

A.D. 1864, July 16.—N° 1788.

HODGE, THOMAS FRANKLIN.—(*A communication from Richard Mott Wanzer.*)—This consists in a machine so constructed as to be able to form by means of a slight change in the arrangement of the parts, either a "double chain stitch" with two threads, or a "turn-over or button-hole stitch."

The work in either case is performed by means of an upper needle and thread and a looper carrying another thread, and conveniently arranged beneath the cloth plate. Each stitch has a separate looper, but both these loopers are attached to the machine in their places, and only require throwing in or out of gear. In making the button-hole stitch, the point of the looper needle passes up through the throat plate over the edge of the cloth, forming a loop. The vertical needle then passes down between the looper needle and its loop, and conveys a second thread through the loop, and then through the cloth. In fact, the loop that is formed by the looper needle is sewn down over the edge by the straight needle.

This last-named looper is thrown out of gear when the two threaded chain stitch is to be made, and another comes into operation. This stitch is made "by the combined action of the two needles and threads, the one having a lateral movement from left to right and right to left in combination with a reciprocating movement passing a second thread in and out of a loop formed by the up-and-down needle through the cloth." Of course one of the needles here mentioned is simply the hooked looper.

[Printed, 8d. Drawing.]

A.D. 1864, July 21.—N^o 1822.

SALAMON, NAHUM.—(A communication from the Florence Sewing Machine Company.)—This invention relates to an arrangement of the feed motion of sewing machines, by which either the "knot stitch, or the double knot stitch, or the lock stitch, or the double lock stitch" may be made at will.

In order to produce the common lock stitch the feed is simply from right to left. To produce the knot stitch the feed is reversed by means of a lever. For the production of the double lock stitch the feed is prevented from taking place after the ascent of the needle. "At its next descent, therefore, the needle pierces the work at the same spot as before, and the shuttle takes up the loop of the needle thread; but in drawing this second loop tight, the two stitches made at the same point of the fabric merge into one, and form the double lock stitch." The double knot stitch is also "formed by changing the direction of the feed."

The following contrivance is described as a thread controller:—"On the end of the driving shaft is a double-flanged disc wheel, which is split nearly through transversely to its axis. A friction guide pulley takes the thread from the bobbin and delivers it on to the disc, which being split through a greater part of its periphery, allows the thread to pass straight or nearly so through it to a guide arm at the other side. When, however, the solid part of the periphery of the disc is presented to the thread, it will draw it to tension, and thus drag a given portion off the the guide pulley, but in continuing its rotary motion the thread will slip off its periphery, and thus afford the requisite supply for the descending needle."

[Printed, 1s. 6d. Drawings.]

A.D. 1864, August 2.—N° 1923.

SMITH, ALFRED.—Forming a button-hole stitch by means of an arrangement by which the needle descends and rises alternately in two different planes. At every other stroke of the machine a forward and then a backward motion are imparted to the “needle “ carrier frame,” “whereby the two different planes are obtained, “ and in each plane the needle and parts complete one stitch.”

[Printed, 10d. Drawing.]

A.D. 1864, August 3.—N° 1932.

WOOD, AMOS LAURENCE.—(*A communication from David Wood Green Humphrey.*)—“This invention relates to certain improvements upon sewing machinery for button hole or edge finishing or stitching, patented by John Henry Johnson, 14th October 1862, No. 2775, on behalf of the inventor of the present improvements.” The first feature in the patent consists in arranging the table that it and all the parts connected with it may readily be turned up to give access to that portion of the mechanism.

Another part refers to a lever worked by a cam and a spring, by means of the alternate action of which the thread may be released and gripped to draw tight the previously formed loop. The portion of cloth “in which a button hole is to be worked is first prepared by cutting a slit through it of the required length “with an eyelet at one end. It is then placed in a clamp consisting of a top and bottom clamping plate having roughened surfaces; both plates are formed with a slot having the general form of a button hole, but of larger dimensions. The bottom clamping plate is secured to the upper surface of a base plate, and this base plate has a mortice through it, both ends of which are circular, one being large enough to pass freely over the flat head of a button-headed or flanged pin that projects upward from the surface of the table.” This mortice or slot acts as a guide “when the clamp is required to move in a straight line,” and the smaller-rounded end “will allow of the clamp making a lateral movement when turning to form the eyelet of the intended button hole.” “Near the rear end of the clamp a round pin projects therefrom below the base plate and through a slot in the table of the machine. Through this pin the required motions are imparted to the clamp. The table of the machine

" is provided with a spring which bears against the edge of the " base plate of the clamp, and presses one side of the mortice " against the button or projection before mentioned, so that " when the rounded end of the mortice reaches the button, the " clamp will be moved laterally, thereby making the line of seam " in the form of an eyelet while the clamp is turning." There is a slot in the table of the machine for guiding the clamp round its centre of motion under the needle.

" An arrangement of mechanism whereby the length of button " holes will be determined automatically " is also described. It consists in causing the clamp to strike a stop lever when it arrives at the proper point, and by thus arresting the feed motion the work is stopped until the clamp is withdrawn.

Finally the inventor claims " the application to sewing machines " of a turning carrier mounted on a curved arm, the lower end " of which turns in a suitable step under the table, and centrally " under the needle, so that the heavy portions of garments or " other bulky articles may rest on and be supported by such " carrier."

[Printed, 2s. 10d. Drawings.]

A.D. 1864, August 3.—N° 1934.

BOLTON, CHARLES.—(*Provisional protection only.*)—This invention relates to the feed motion of sewing machinery.

" In machines of the kind called table machines," the feeder consists of a vertical bar, the upper end of which is serrated and works immediately under the pressure foot. On the end of the shuttle shaft is a cam, which works against this feeding bar in such a way that at first it lifts it slightly, in a nearly vertical line, and as it continues to rotate it comes against a projecting arm on the bottom of the feeder, and " thereby communicates a motion of partial rotation to the said feeder." When the cam escapes from this arm the feeder is returned to its normal position, with a similar movement, by means of a spring. The inventor says,— " In sewing machines of the kind called arm machines, I employ " a feeder bent at right angles at or near its middle, and I actuate " the said feeder by means of a sliding wedge attached to and " worked by the shuttle driver. This wedge may either work " under the horizontal arm or head of the feeder or against the " lower end of the vertical arm. When the pressure foot has a

" rising and falling motion it is only necessary to give a sliding horizontal motion to the feeder. In this case I give the said sliding motion by means of a cam of the kind herein-before described and a coiled spring, the advance motion being given by means of the cam, and the return motion by means of the spring."

[Printed, 4d. No Drawings.]

A.D. 1864, August 12.—N° 2010.

DAVIES, GEORGE.—(*A communication from Abraham Hart.*)—The first part of this invention relates to a machine for forming on the edges of fabrics a "button-hole stitch." The operation of this mechanism is as follows :—"As the needle begins to rise a loop of thread will be formed at the side of the same, and this loop will be penetrated by the loop carrier and its thread. As the needle continues its upward motion the arm attached to the sleeve" (this sleeve encircles the needle bar) "moves round the needle bar; the notched projection at the end of the said arm catching the loop of lower thread at the side of the loop carrier, and conveying it to such a position that a loop of the said thread shall be spread beneath the point of the needle, which as it descends penetrates the loop and enters the fabric, after the latter has been moved by the feed the length of one stitch. When the needle again rises a loop of upper thread is formed at the side of the same, and this loop is penetrated by the loop carrier as before; the lower thread being thus carried back and forth over the edge of the fabric and locked to the upper and under side of the same by the upper thread, so as to form a binding over the edge of the fabric, such as is required for button holes." A take-up apparatus is provided "to take up all the slack thread." To convert the machine into one to make the lock-stitch, the loop carrier is moved away from the needle, and a suitable shuttle apparatus is attached to the base plate.

In carrying out the third part of the invention, which relates to a machine for making a button-hole stitch, a "curved loop carrier . . . near the end of which passes the under thread," and a "curved loop holder," are used in combination with an eye-pointed needle with its upper thread. Both the loop carrier and the loop holder are worked by cams. "The loop carrier moves in

" the arc of a circle, and conveys a loop of thread from the under side of the fabric and upwards across the edge of the same." The whole arrangement forms a stitch similar to that previously described in this abridgment. "When the machine has to be converted into a lock-stitch sewing machine," the loop carrier is removed, and the loop holder and its arm are detached. The vertical needle works in conjunction with a spool case, supplied for the occasion, which spool case "consists of a hollow cylinder open at the rear end for the introduction of the spool, and having at the opposite end a hooked point."

[Printed, 1s. Drawing.]

A.D. 1864, August 16.—N° 2040.

NEWTON, ALFRED VINCENT.—(*A communication from Walter Bennett.*)—" Improvements in sewing machinery." "The vertical needle receives its motion from a rock lever pivotted on the side of the ordinary bracket arm, and actuated by a toggle joint coupled by a connecting rod with a crank on the main shaft." The proper tension and slack of the needle thread is obtained by a series of guides and a tension spring. One of these guides is mounted on the connecting rod and serves by its movements to gather up the slack; the others are fixed on the rock lever and on the bracket arm. The feed apparatus consists of a feed dog divided up into portions, say three, which work in separate slots in the bed plate of the machine." This feed dog "is secured to a sliding bar, which is supported by and traverses upon the end of a rock lever" below the bed of the machine. This rock lever, being worked by an eccentric, serves to move the feed dog vertically. It also communicates motion to a vibratory plate to which the sliding bar is attached by a link. Thus the to and fro motion is secured. To obtain the tension for the shuttle thread, it is passed through a series of holes in the shuttle, and a spring bears on the thread at a point between these holes. A "spring lever" "pivotted to the end face of the bracket arm" serves to actuate the presser foot, and also in the "front part of the bracket arm" is attached "the shank of a seaming guide." The treadle is hung "at or near the height of the ankle above the platform or tread." "To facilitate the winding of thread on to the shuttle bobbin" a wire bobbin holder, worked by a friction roller on the main shaft, is provided.

[Printed, 1s. 4d. Drawings.]

A.D. 1864, August 24.—N° 2090.

STEINBACH, JEAN MATHIEU.—(*Provisional protection only.*) The inventor actuates his sewing machine by means of a “cam” or an eccentric in contact with and thereby driving a wheel or “roller on an arm, lever, or piece which carries or is connected with the part or instrument to be actuated.” The up and down and lateral movements of the foot or presser and the feed motion are regulated by three screws. The needle is inserted “in the clip” of the needle carrier at the side instead of from underneath, and “as the parts get worn the grooves are tightened up with screws.” “The shuttle hook, hooked needle, or thread carrier” are actuated by “a roller or wheel working in a curved guide.” The inventor moreover says—“I connect two shuttles, hooks, hooked needles, or carriers, together, namely, one for a single thread, “with one for two threads or a double thread, and mount them on “the same axis or frame, so that by turning this compound piece “partly round, the shuttle, hook, hooked needle, or thread “carrier required will be brought into use, and the one not re-“quired will, by the same motion, be moved out of the way “without either having to be unscrewed or unfastened.” The tension is regulated by “a pad, cushion, or break, which bears “against the bobbin and shifts as the thread unwinds, thereby “relieving the spring which exerts pressure under the bobbin.”

[Printed, 4z. No Drawings.]

A.D. 1864, August 27.—N° 2113.

HASELTINE, GEORGE.—(*A communication from Gordon McKay.*) —A large portion of the improvements comprised in this specification refer to modifications in the details of the sewing machine shown and described in the Specification N° 1113, April 16th, A.D. 1862. In the aforesaid specification it was shown how the stroke of the needle is “automatically increased and diminished “as the stock operated upon is thick or thin.” In practice it was found desirable to make certain alterations in the means of accomplishing this end, and this latter improvement is comprised in the present improvement. “In the aforesaid patent the presser “foot was liberated at its highest elevation, from which it was “forced suddenly down by the action of a spring. This was objec-“tionable on account of breaking the thread loop,” and therefore the present improvement provides for the presser foot being released

when at its lowest point. "The slide which prevents the hook of "the needle from catching in the previously formed loop" was previously described as a tube or nipple surrounding the needle. "Experience proves that it operates best as a plain piece or bar." In the previous specification "the needle lever and parts connected therewith were counterbalanced and kept from improper movement by a spring. Herein the spring is dispensed with, and "the same object better attained by friction upon the needle bar "applied through a set screw acting through the intervention of "an elastic medium upon a gib faced with leather." Previously, moreover, the whirl was driven by cords or bands; herein the motion is communicated "by positive connection throughout." An expansion joint is supplied to prevent the injurious effects which would otherwise arise through the expansion caused by the heat applied to the horn to keep the wax plastic. The roll which guides the thread is heated sufficiently to prevent the sticking of the wax thereto; and the thread is drawn through a hole which is so constructed as to open against a spring on the passage of a knot. Thus the superfluous wax is removed. One of the improvements also consists "in so combining a plough or tubular "knife or tool for cutting out a strip of leather to form a channel "or groove in the sole, with a straight knife for cutting a slit "from said channel to the surface of the sole. . . . The plough "or tubular knife cuts out the channel for containing the chain "of stitches, and the straight knife not only cuts the opening "leading from the surface to the channel, but cuts it in such a "manner as to form a flap, which is temporarily turned back for "the operation of the sewing mechanism, and is afterwards "drawn over and closed down upon the channel, and so as to "conceal the chain of thread."

[Printed, 2s. 4d. Drawings.]

A.D. 1864, September 6.—N^o 2173.

MENNONS, MARC ANTOINE FRANÇOIS.—(*A communication from Joseph Weatherby Bartlett.*)—The inventor claims, under this patent, "the combined sliding and vibratory movement of "looper or under needle rod," obtained by means of a bevelled cam, the face of which works against the side of the bearing supporting the said looper or under needle rod.

Also the feed motion which is worked through an adjustable "lever" working on the horizontal looper or under needle rod; a cam on the front end of the looper or under needle rod gives the upward motion to the feed bar. This cam may also be so arranged as to perform both the upward and forward motions if necessary, and indeed this plan is adopted in single thread machines.

[Printed, &c. &c. Drawings.]

A.D. 1864, September 8.—N^o 2196.

NEWTON, ALFRED VINCENT.—(*A communication from Isaac Merrit Singer.*)—Various improvements in sewing machinery, parts of which are applicable to covering buttons and ornamenting fabrics. The first part of this invention relates to a machine "adapted to the working of button holes, covering buttons, and "covering the edges of cloth, braiding and ornamenting the "same," in which machine the work is performed by means of a needle having both a vertical and vibrating motion. "The "vibrating motion of the needle enables it to descend through "and beside the edge of the cloth." The needle and presser bars are mounted together. "A modification of this arrangement may "be made to cover buttons which have a central hole. The table "of the machine is fitted with a throat plate having the requisite "holes for allowing of the descent of the needle when its position "laterally is shifted, as already noticed, and also of a slot or slots "to permit of the escape of the thread. This throat plate also "carries a central stud or pin small enough to enter the central "hole in the button to be placed thereon. The amount of vibration "of the upper needle is to be adjusted to the semi-diameter "of the button. The ordinary presser foot is to be changed for "one having a circular form and of less diameter than the button "to be covered. The throat plate is slotted from the central stud "pin to the greatest distance the upper needle is required to "vibrate, to allow of the escape of the covering thread; the loops "of the needle thread are locked by any suitable looper, as before "mentioned, and on the tightening of the stitches the under "part of the button will be covered. The requisite circular feed "may be given by adapting any of those described in the patent," N^o 3181, December 17th, 1863. For fringing or otherwise ornamenting fabrics, a "curved finger," which manipulates the thread and places it on certain "detaining hooks," is employed. The loop of thread placed over the detaining hook is then sewn on to

the fabric, and it is freed from the hook by certain projections on the curved finger at the next vibration of the latter. If it is required to cut the fringe so made, the detaining hooks are made with knife edges. "A modification of the above arrangement of mechanism suitable for covering buttons consists in substituting " a throat plate having a projecting curb to receive the button to " be covered instead of a throat plate having a central stud pin, " as before mentioned. The distance between the two needles " which operate simultaneously, is to be adjusted so that one " may descend through the central hole of the button and the " other past the edge thereof, a portion of the curb being cut " away and slotted for the passage of the needle. The curved " rocking finger and detaining hooks are now to be adjusted to " lay a thread from the centre to the circumference of the button. " The simultaneous descent of the needles secures this thread, by " which the upper face of the button will be covered, and both " loops of the needles are locked beneath the button and its under " side covered by the looper instrument."

The looper "is a round bar having a barbed point, and at about " the middle of its length a helical groove is cut in it." It is traversed to and fro horizontally and at right angles to the line of feed by an eccentric or crank, and it is rotated by means of a fixed pin in one of its bearings, which pin works in the "helical " groove."

" In order to pass an ordinary reciprocating shuttle through " two or more loops it is necessary that the throw be proportion- " ably increased, and that the opening between the back of the " shuttle and the driver be made positive at one part of the " throw." This is effected by adding "a short lever or latch" to the driver. " One end of this lever takes into a notch in the " body of the shuttle, its other end is acted upon by an incline " and a stop in the shuttle race. As the shuttle passes through " the loops the point of the lever will present no obstruction to " the loops, but when its opposite ends strikes the incline in the " race the point is thrown forward and holds the shuttle up " against the forward end of the driver, leaving a clear space be- " tween the back of the shuttle and the driver for the escape of " the loops."

The inventor proposes to make throat plates having on their upper surfaces "annular projections, V-shaped, in cross section, " around the hole through which the needle passes."

The remainder of the specification refers to certain improvements on the inventor's previous patent, dated December 17th, 1863, which improvements relate chiefly to the reciprocating shuttle, the construction of the shuttle race, and the mode of supporting the shuttle therein.

The inventor proposes to work the Wheeler and Wilson sewing machine by "driving the shaft which carries the rotating shuttle" by gearing on a cam shaft, below which shaft is the main driving shaft of the machine. By this arrangement the machine "may be made to finish each stitch as soon as it is taken, and "great facilities are given for applying the reversing feed mechanism described in the patent of December 17th, 1863."

The inventor doubtless alludes to his patent of 16 December 1863, No. 3181. There is no patent of this nature dated 17th December 1863.

[Printed, 8s. 6d. Drawings.]

A.D. 1864, September 15.—N° 2246.

HASELTINE, GEORGE.—(*A communication from Joseph Blanchard Crosby.*)—This refers to certain improvements in the manufacture of boots and shoes, among which is described "a "novel stitch" especially applicable to sewing leather. This stitch "is made by chain stitch sewing mechanism with such "appliances as will prevent each loop as formed from being "drawn through and locked with the last formed loop, and will "also prevent the withdrawal of the formed loops out of the "stock, so that the different parts of the stock or material united "may be said to be held together by a series of thread staples, "and in boot or shoe construction the bars of the staples come "upon the inner surface of the shoe, while the staple points come "on the outer surface of the sole, where they rivet over or head "up in practical wearing use."

Mention is also made of a guide to be attached to the horn of sewing machines, in order to keep the seam at an uniform distance from the edge of the sole.

[Printed, 10d. Drawing.]

A.D. 1864, September 20.—N° 2301.

HIGGINS, AMELIA. — (*Provisional protection only.*) — Ornamenting fabrics with flowers, &c. in relief, formed by sewing on to

the fabric portions of "crape or areophane shaped . . . to imitate
" the leaf or petal or other component part of the flower."

[Printed, ad. No Drawings.]

A.D. 1864, September 27.—N^o 2366.

SYMONS, HENRY CYRUS.—Improvements in sewing machines. The feed motion is worked by preference directly from the needle slide, "which is fitted with two projections, the one " in its descent strikes down one end of the feed lever and " causes the other end to come in contact with the leg and lift " it, the other projection in its ascent strikes the end of the feed " lever up again and brings the other end against the leg so as " to force it outwards and lock it, thus feeding in the work and " holding it until the needle again descends." This feed motion may be fitted on a case cylindrically round the needle slide so as to be free to turn in any direction. Glass slides or covers are fitted to the shuttle box to enable the loop and stitch to be viewed while forming. The face of the shuttle is kept up to its work by an adjustable piece and the loop is held open by a "finger piece." For better regulating the tension of the shuttle "thread," the inventor says, "I make its reel with one end or "trunion enlarged, and the bearing in which it revolves a groove "in the point end of the shuttle; a moveable plate covers the "trunion; the thread passes over the plate, and above it is a "spring and screw which determines the pressure both on the "thread and trunion." "A thread lifter with a tension spring" takes up the slack.

In one arrangement of the inventor's machinery the frame of the machine is arranged "to carry in the upper part the needle head and main spindle, and in the lower part to support the needle "plate so high that the interlacing of the thread may be seen "and regulated without lifting the machine or work being "stitched."

To give motion to sewing machines "instead of the ordinary "connecting rod and treadle" there is employed "a rod suspended from a centre above the crank pin having a vertical "slot in which the crank pin works, the lower end is fitted with "a suitable shoe, into which the foot of the operator is placed, "and being swung backwards and forwards, the crank pin is

" caused to rotate in the slot." Various modifications are described.

[Printed, 1s. 10d. Drawings.]

A.D. 1864, October 12.—N° 2519.

INMAN, RICHARD KESTERTON.—(*Provisional protection not allowed.*)—The petitioner proposed to ornament "shirt fronts" "and other such like articles" by embroidering them with monograms, crests, &c.

[Printed, 4d. No Drawings.]

A.D. 1864, October 15.—N° 2547.

HAYES, JAMES.—In this machine a "lock loop stitch is made." Two threads are used, one carried by a vertical needle the other by a horizontally moving looper. Both these instruments are worked by cams and a third cam works the feed. "In order to "form a loop from the lower thread for the upper needle to "pass through," a reciprocating hook catches the thread from the looper as the latter moves back. "By this means an open "loop for the vertical needle to pass through is produced, and is "held until the upper thread is secured, when the lower loop "will slip off the end of the hook and the stitch will be completed." A projecting stud ensures the opening of the lower loop.

[Printed, 1s. 4d. Drawings.]

A.D. 1864, October 17.—N° 2557.

JUDKINS, CHARLES TIOT, and GOSLING, WILLIAM HENRY.—"Improvements in machines for sewing or working button holes."

The sewing or work is performed by means of a loose needle which is passed backward and forward through the material and throat plate and the button hole and throat plate, by means of spring clips above and below the fabric. These clips traverse slightly and the feed motion propels the fabric forwards in the usual manner. A hook attached to a horizontal shaft pulls the thread through the fabric.

[Printed, 1s. 10d. Drawing.]

A.D. 1864, October 28.—N° 2667.

JACKSON, WILLIAM.—“Improved arrangement of the parts in sewing machines for using shoemakers’ wax thread for sewing “on the soles of boots and shoes.” The object of the inventor is to simplify as much as possible machines of this class, and to dispense as far as he can with such parts as are likely to get out of repair. His chief improvement is working the thread carrier or its equivalent “with a constant revolving motion in one direction, “so as to dispense with all reciprocating movement in its operation.” This rotatory thread carrier is “a hollow cylinder, the hollow centre of which allows the descent and passage of the needle hook through it, it also has a second and smaller transverse hole or passage beside the central aperture for the purpose of carrying the thread which is put through it, and thereby guided so as to be seized by the hook in order to form the loop “to be drawn through so as to form the stitch.”

[Printed, 1s. 2d. Drawings.]

A.D. 1864, November 4.—N° 2736.

FRASER, ALEXANDER JOHN.—(*Provisional protection only.*)—“Improvements in apparatus for stamping or marking vamps, toe-caps, and other parts of boots and shoes, which apparatus is also applicable to stamping or marking other articles of leather.” The stamp is to be used for marking on leather the design, which is afterwards to be stitched in the sewing machine. The stamp is made by raising prick points “in manner similar to “cutting the teeth of a rasp.” In another method the prick points are driven up from the back of a thin plate of metal by means of a sharp punch. The thin plate is then backed by stouter metal. Or the inventor uses a “sharp-pointed triangular punch, which being driven through the thin metal from the back cuts two of the sides of the triangle, leaving the other intact and causing the piece partially severed to stand up on the face of the plate.” This plate is also backed as before. When holes are to be made here and there in the leather punches may be introduced in the stamps.

[Printed, 4d. No Drawings.]

A.D. 1864, November 11.—N° 2817.

KEATS, JOHN, and CLARK, WILLIAM STEPHENS.—The first improvement consists in making shuttles of horn or india-rubber,

whereby noise is diminished. To give the required tension to the thread, it is passed round grooves in a cylindrical piece of metal, glass or porcelain, "the thread being conducted from one groove to the other by means of notches cut in a sloping or sectional spiral direction through the ridges between the grooves." When the shuttle is carried round a circle, it is made of a peculiar form. The sides or body are so shaped that it shall fit any carrier, and "the point being bent inwards towards the centre round which the carrier turns, so that the point will describe a smaller circle than the body of the shuttle, a shoulder is thus formed at the end of the shuttle, whereby it can be carried round the face of any disc without the usual shuttle race or bearing." The shuttle is also formed with "an inclined projection upon it;" this projection "takes hold of the shuttle thread before the point of the shuttle enters the loop of the needle thread, and by carrying the shuttle thread around with it takes up the slack of the thread as the shuttle comes round to enter the loop of the needle thread." The feeding apparatus is moved by "a projection at the back of the needle slide," acting in conjunction with two springs. The needle is held in the carrier by a V slide, which in its turn is held in its place "by a wire at the end of a spring." This arrangement obviates the use of screws for this purpose.

[Printed, 1s. Drawing.]

A.D. 1864, November 12.—N° 2822.

McCLOSKEY, JOHN.—(*Provisional protection only.*)—The inventor proposes to dispense with the pushes or pads which retain the loop in the Wheeler and Wilson sewing machine, and to substitute for them a stationary bevelled point, standing in a groove round the edge of the revolving hook. This point retains the loop until it is liberated by a "bevel or cavity in the edge of the hook coming opposite the point of the said detainer."

[Printed, 4d. No Drawings.]

A.D. 1864, November 21.—N° 2902.

MARTIN, WILLIAM.—"This invention has reference to the guides used in sewing machines to regulate the width of the rows of stitching." The present invention is applicable to various descriptions of machines. To the head of the machine is

secured a horizontal bracket. This bracket carries the vertical slide, which has at its bottom a foot roller. Coiled round the shaft of this slide is a spring which serves to press the roller upon the surface of the work. By means of an adjusting screw the vertical slide may be advanced along the bracket from the needle or vice versa, thus the distance between the rows of stitching is regulated. When not in use the roller may be raised from the work.

[Printed, 1s. Drawings.]

A.D. 1864, November 21.—N° 2903.

WILLIS, HENRY, and RICE, GEORGE.—(*Provisional protection only.*)—The object of this invention is to “effect the winding of the thread on a shuttle spool by the action of the machine during sewing, so that while the thread on the spool in operation is being used, another spool is being wound with thread ready to replace the one in use as soon as it is exhausted.” The spool on which the thread is to be wound is placed between two centres on uprights on the table or platform of the machine. One of the centres carries a pulley, driven from one of the wheels of the sewing machine. On a vertical spindle, at a short distance from the spool, is placed the reel or bobbin holding the thread to be wound on the spool. The thread, after leaving the bobbin, passes through a suitable tension apparatus before reaching the spool.

[Printed, 4d. No Drawings.]

A.D. 1864, November 25.—N° 2946.

WARD, WILLIAM.—“Improvements in table covers.” The patentee claims :—

Firstly, making table covers of two fabrics united back to back by stitching round their edges, made by machinery such as described in the Specification No. 957 of 1862, being that of Letters Patent granted to Lindley and Taylor.

Secondly, making the table covers as above and in addition connecting the surfaces of the two fabrics by embroidery, by preference such as is produced by machinery described in the Specification of the Patent granted to Henry Bock, No. 5788 of 1829. This machine is commonly known as “Heilmann’s machine.”

[Printed, 4d. No Drawings.]

A.D. 1864, December 14.—N° 3096.

TAYLOR, HERBERT.—(*A communication from Henry John Baker.*)—Under this patent the inventor proposes to produce ruffles, frills, and gathered fabrics in such a way that “the gathers” are held in place by a thread which passes through the cloth “necessarily and invariably between the gathers, the gathers” resembling curved corrugations rather than more sharply defined folds or plaits.” “In producing these gathers in a sewing “machine, the feeding mechanism, that is to say, that portion of “the feeding device and presser foot which takes hold of and “feeds the cloth is disposed in such a position with reference to “the stitching apparatus that the cloth shall be fed just past the “needle before the cloth is gathered, and left free beyond the “needle from the pressure of the foot, so that it can be gathered “by the stitching apparatus whilst in the act of drawing up the “loop or forming the stitch.” The gathers so made can be produced in an ordinary sewing machine with any stitch.

[Printed, 8d. Drawing.]

A.D. 1864, December 29.—N° 3238.

JOHNSON, JOHN HENRY.—(*A communication from Lebbeus Wisner Lathrop and William McMonsies.*)—This refers to an improved looping apparatus applicable to machines for making the “lock chain or embroidery stitch.” To one end of the horizontal driving shaft, below the table, is attached “a slotted grooved cup, “revolving with the shaft, and provided with a hook on its outer “edge, which seizes the loop of the needle thread by passing in “front of the needle. A slot is cut through the cup extending “clear to the edge or rim, and a groove is also cut round the “interior circumference of the cup near its front edge.” The groove is to assist in securing the spool case, which is inserted in the cup, in its place. An elastic “take up” is fixed to the back of the cup. A “hook or projecting arm” is attached to the back of a frame connected with the spool case, “upon which the loop “catches, and is held during part of a revolution of the cup.” The spool case is prevented from revolving by a suitable contrivance, which moreover does not interfere with the passing of the thread. “The hook on the cup in revolving catches the loop of the “needle thread and carries it round under the spool case, the front “portion of the loop passing over the front part of the spool case,

" whilst the back portion of the loop enters the slot in the cup " and passes behind the spool case." The back part is detained by the projecting arm " until the revolving thread controller, " which is attached to the cup, comes by its revolution in contact " with the thread so held, and carries it round, so as to withdraw " the loop entirely from the revolving hook and hold it sufficiently " firm to prevent its being again caught or disarranged whilst the " revolving hook seizes another loop of the needle thread. The " thread controller is now released by its own motion from con- " tact with the loop, which is free to be drawn up to the cloth." These movements produce the lock stitch, and for the other stitches certain alterations are necessary.

[Printed, &c. Drawing.]

1865.

A.D. 1865, January 2.—N° 2.

MACAULAY, THOMAS ANTONEY.—This refers to the following improvements:—

" A peculiar arrangement of mechanism for the purpose of pro- " ducing from a regular rotating shaft an irregular rotating or " reciprocating motion which, imparted to the needle bar by a " pitman or other suitable connection, gives the needle bar the " proper motion and time to allow the shuttle to pass through " the loop and complete the stitch."

" Arranging the said mechanism in combination with this or " any other suitable motion of the needle bar, so that it will " partially or wholly suspend or cause a backward movement of " of the shuttle, so as to allow the needle or thread controller to " carry the thread off the shuttle, then causing the shuttle to " complete its forward movement at the same time as the needle " bar has completed its upward movement, and so draw the " the thread from the reel above and the shuttle below at or " about the same time. In this way tight stitches may be made."

" A thread controlling device" consisting of a "thread lever" kept in contact with a "rocker by a spring with sufficient force to " pull in the stitch, but if the thread receives an undue resist- " ance, then by the upward motion of the rocker before the thread

" lever reaches its stop or highest point an extra force is given to the spring so that the greater the resistance offered the thread the greater the force given the spring to overcome such resistance." The thread lever by passing and repassing a stationary eye, " takes from the length of thread through which the shuttle passes" and " pays out to the shuttle again."

" Making the framework which contains the parallel shafts, and the part known as the driving wheel bracket, all of one piece, either by being bolted together or cast solid. This enables the holes to be bored parallel with each other, the part containing the lower shaft being under the platform admitted from behind."

[Printed, 1s. 6d. Drawings.]

A.D. 1865, January 3.—N° 13.

MASCART, GUSTAVE.—(*Provisional protection only.*)—This improved sewing machine, which is intended to serve as a "plaything for children," makes the chain stitch. It is made entirely of metal, and "consists of a small figure lying on its back, the legs being hollow and thrown over the head admit of a small shaft running through them, one end of which is fixed to the centre of a small hand wheel, and the other, which "communicates motion to the needle," has a cam. This cam works the presser foot, and a pin on it works the needle bar. The looper consists of a shaft, advanced and retired by a cam movement and a spring, with a hook at its extremity.

[Printed, 6d. Drawing.]

A.D. 1865, January 5.—N° 36.

NEWTON, ALFRED VINCENT.—(*A communication from Jacob Zuckerman.*)—This relates to machinery for making the "lock stitch." "The loop of the needle thread is caught by the beak of an oscillating bobbin holder which rests loosely between the jaws of a slive secured to a horizontal shaft below the table of the machine; to this bobbin an oscillating motion is imparted by contact with the shoe, recesses being made in the shoe, and corresponding projections on the bobbin holder, or vice versa, to act as a coupling, which allows the needle thread to pass freely between the shoe and the bobbin holder." The bobbin and its holder are further held in position by springs,

which, however, do not interfere with the passage of the thread.
 " After the loop of the needle thread has passed over the bobbin
 " carrying the lower thread, and the needle has ascended, the
 " loop is turned up under the table by a vibrating arm pivotted
 " to the under side of the table, and held in such a position that
 " the needle, on its subsequent descent, will not pass through it,
 " and each stitch is drawn tight by the subsequent action of the
 " beak of the bobbin holder on the next succeeding loop of the
 " needle thread; this vibrating arm is operated by a V-shaped
 " lever mounted on the horizontal shaft to which the shoe for
 " carrying the bobbin holder is keyed."

[Printed, 1s. 2d. Drawings.]

A.D. 1865, January 17.—N° 144.

JUDKINS, CHARLES TROT.—The machine herein described works with one thread. The needle, which is suitably actuated from an upper shaft, descends through the fabric and then rises slightly so as to form a loop. A small hook worked by the under shaft then enters the loop and holds the thread until the needle has descended again through it and withdrawn it from the hook. The fabric is fed by "an oblique-shaped ring with a leg and foot" or presser operated by a cam or other equivalent movement "from the upper shaft." Two threads may be used by having an eye in the hook to carry a second thread from a separate spool.

[Printed, 10d. Drawing.]

A.D. 1865, January 19.—N° 163.

BRADBURY, GEORGE FRANCIS.—Sewing machine shuttles. This relates to that class of shuttles "having one] side open, " through which the thread bobbin is inserted into its bearings "in the shuttle." Instead of constracting them by "blocking sheet metal by means of stamps," as usual, the inventor makes his improved shuttle from a solid piece of metal by "drawing or " planing, boxing, drilling, and cutting."

[Printed, 8d. Drawing.]

A.D. 1865, January 24.—N° 203.

DEROEQUIGNY, ALFRED CHARLES FRANÇOIS, and GANCE, DOMINIQUE.—"Certain improvements in sewing machinery, by

which are worked button holes and "that kind of embroidery known as scalloping." Various other kinds of stitches may also be made.

"The needle and some of the organs causing it to work" are enclosed in "a box, to which alternate motion is given perpendicular to the usual movement of the needle." This arrangement is not sufficient for all kinds of stitches, and therefore "an elbowed hook" is added, "which at the moment the needle gets out from the cloth, after having left a loop in the line forming the edge of a button hole, or after its thread being tied by the shuttle thread, takes hold of the thread, and brings it back to the stitch facing the last loop;" during that time the cloth is fed forward. "The hook keeps the same position during the alternate motion of the needle, and when this last begins to descend after having performed the lateral motion, and at the very moment it penetrates into the cloth, the hook rises, leaving the thread around the needle, so that when this last rises up, the loop formed by it remains within the segment determined by the hook." "For button holes the hook is provided with an open boss through which the needle passes, serving as a guide and center at the same time to form the eye, the cord being wound upon a special bobbin, is conducted and guided by the shoulder of the said hook."

"When a whip stitch is to be made, the hook is taken off, and a flat guide is screwed on a suitable place on the table."

The feeding bar which works under the table performs a horizontal forward or backward movement, or nearly so, as well as an upward and downward movement. It performs a downward movement when it has performed its backward movement, and an upward movement when the forward movement is completed. The horizontal movement is derived from a semicircular groove and thus the "removal of the cloth at any required distance and direction" may be obtained.

[Printed, i.e. Drawing.]

A.D. 1865, February 3.—N° 304.

CLARK, WILLIAM.—(*A communication from Edmond Philippe and Dominique Gance.*)—"This invention relates to improved machinery for producing what is known as the whip stitch, used in the manufacture of gloves, for sewing hat leathers, and otherwise." The improvements are :—

1st. "In the use of two threads, one furnished by the needle, " and the other by the shuttle, they being afterwards joined and " raised one by the other, first into the leather, and then brought " forwards. This crossing of the threads offers sufficient resistance to prevent their giving way, which might otherwise occur " on any slight strain, thus rendering it impossible for the seam " produced by the junction of the two pieces of leather to come " unsewn."

2ndly. "In the doubly increased strength ensured by the employment of two threads in every seam, while the needle " does not pass the whole of its length through the leather, and " only just a sufficient amount of thread for producing the " stitch."

[Printed, 2s. Drawings.]

A.D. 1865, February 7.—N° 334.

MASTERS, HENRY.—"Obtaining variable motion in sewing and " other machines." The inventor communicates movement to the machine by means of a pedal having "two or more rollers " attached" to it. These rollers act or press on the driving strap and the action of the foot on the pedal serves to press them against the strap and so tighten it. On lifting the foot the strap will be loosened because the rollers will be moved from it by the action of a balance weight attached to the pedal. "The result " practically is, that by pressing lightly upon the pedal, a slow " velocity will be imparted to the spindle, and by pressing heavily " a more rapid velocity will be obtained."

[Printed, 8d. Drawing.]

A.D. 1865, February 9.—N° 370.

NEWTON, ALFRED VINCENT.—(*A communication from Elias Howe, junior.*)—"Improved mechanism for operating the working " parts of sewing machines." Under the front end of the machine " bed" is a transverse driving shaft having a pulley at its end. To this pulley there is attached, by means of a pin, a "rocking slide." The slide is furnished with a curved slot in a portion of its length, the said slot serving to suspend it to a pendant below the machine by means of a stationary pin. To a projecting lug on this rocking slide is fixed the end of a horizontal bar or link the other end of which is attached to the

shuttle. The same projecting lug is also connected by means of a curved arm with the needle carrier; thus one motion of the rocking slide serves to actuate both the needle and the shuttle.

"When the rotary or the wheel feed is employed, the following "means is adopted for regulating the length of stitch." "The "cam which gives motion to the reciprocating clamps or other "drivers of the ring or wheel carrying the roughened or feed surface is mounted on the end of a driving shaft . . . and "made adjustable laterally thereon." It is secured to the shaft by a feather and groove, and is adjusted by a set screw. "The "projection on this cam is made tapering in the direction of its "length, and any portion of that length can be brought to act "upon the end of a lever which transmits motion to the clamp "or other driver used to operate the rotary feed."

"In order to obtain a reciprocating feed" a roughened surface is attached to the end of an eccentric rod placed vertically under table, eccentric downwards. This rod or lever is slotted obliquely in the direction of its length, that is to say, a line drawn through the axis of the slot would meet the axis of the rod or lever at an acute angle. This slot serves to receive the fulcrum block, which is adjustable in order to vary the length of the feed. "The "obliquity of the slot in the feed bar is such" that in rising the tendency of the eccentric to rock the bar is counteracted, thus the bar rises practically perpendicularly to take firm hold of the material. The inclination of the slot now causes the forward movement of the feeding surface to be greater than that which would result from the action of the eccentric alone."

[Printed, 1s. 10d. Drawings.]

A.D. 1865, February 11.—Nº 396.

NEWTON, ALFRED VINCENT.—(*A communication from Elias Howe, junior.*)—An arrangement of mechanism to form the ordinary or tambour stitch. "The rotating hook which opens out "the loop of the needle thread, and holds it open for the insertion of the interlocking loop, is formed upon one end of a "short cylindrical tube, which is mounted in a socket at the "extremity of a vertical shaft. The hook is provided with "a point and a heel by cutting away a portion (about a quarter) "of the circumference of the tube. A half-round groove runs "round the outside of this tube immediately below the hook."

" The point of the hook in its rotation enters the loop of the
 " needle thread formed below the throat plate of the machine,
 " and this loop being spread by the continued rotation of the
 " hook drops into the groove before mentioned. At its next
 " descent the needle presents another loop which is immediately
 " entered by the point of the hook as before, and the previous
 " loop being cast off by the heel of the hook is drawn up to
 " complete the stitch by the further rotation of the hook."

In order "to sew a looped seam without twisting the loops on
 " the under side of the cloth" a vertical needle is used in com-
 bination with a "rotating double-headed looping hook," "their
 " actions being so timed that the needle shall perforate the fabric
 " twice for each revolution" of the double looper, "and that
 " this latter shall draw each loop of needle thread through the
 " preceding loop." "This machine may be caused to sew with
 " two threads by arranging a bobbin of thread in the double
 " looping hook."

[Printed, 1s. 4d. Drawings.]

A.D. 1865, February 15.—N° 430.

NEWTON, ALFRED VINCENT.—(*A communication from Elias Howe, junior.*)—This invention includes the following improvements in sewing machinery :—

" Ensuring an uniform length of stitch in turning curves by
 slotted the feeding surface at its centre to allow the needle to
 " pass through it. Through this slot projects a tubular needle
 " throat fitted to the side of the shuttle race. . . . This tube
 " rises above the level of the ordinary throat plate, through which
 " the roughened feed plate plays, so that the work to be sewn is
 " held between the top of the needle throat and the presser foot,
 " and can be moved around the needle as a centre, and from this
 " centre, at which the sewing operation takes place, each feed
 " motion will be of the determined length, whatever may be the
 " radius of the curve." Controlling the thread by passing it
 into the V groove of a pulley on the "needle bar guide box." It
 is held in the groove "while the needle is descending to pierce
 " the cloth, but on the further descent of the needle the increased
 " strain on the thread will cause the thread to leave the groove
 " and produce the slack required to form the loop below the
 " work." A modification of this controller is applied "to the
 " shuttle."

Constructing "the shell of the shuttle" of sheet steel; it is attached to the face plate by a hinge, and secured at its fore end to the plate by means of a spring latch." The thread leaves the shuttle by a hole in the shell and is pressed on by a spring.

Fitting to the shuttle driver a "rock lever" made wedge-shaped in cross section" at one end. As the shuttle driver traverses the race the rear end of the lever, in meeting an incline on the "face" of an irregularly cut step formed in the shuttle race will be raised, and the wedge-shaped end of the finger will be forced down and take hold of the shuttle, but when the loop is to be passed over the rear end of the shuttle the wedge shaped end of the lever is raised by the action of the coiled spring "to allow the loop to slip off the shuttle."

The use of "bevilled presser rollers, either singly or in pairs, mounted on inclined stud axles at the lower ends of the presser bars" in sewing sticky or gummy materials.

Attaching the presser foot to its bar by turning down "the end of the presser bar to a conical form, so that the binding screw which attaches the foot to the bar may bear against the cone, and thus draw the socket of the foot firmly into contact with a shoulder on the end of the presser bar."

Placing the bobbins, upon which thread is to be wound, in a frame "attached to the outer end of a strong spring." By means of a screw this spring may be depressed, until a friction roller connected with the frame is brought into contact with the periphery of the fly wheel of the machine.

Keeping the needle bar up to one side of its slide by means of a helical spring, and preventing the point of the shuttle from striking against the needle by a steel guard let into the bed of the machine.

Making "the heads of the needles and the socket in the needle bar with a flat side" to secure correct adjustment.

[Printed, 1s. 6d. Drawings.]

A.D. 1865, February 20.—N° 475.

PERCY, HENRY.—(*Provisional protection only.*)—The needle of this machine works downwards from above, the arm being actuated by a face cam under the machine. A "work arm" projecting horizontally from one side of the table contains the

shuttle. The shuttle driver is worked by a crank pin, and this driver has an irregularly formed slot in it, so that a variable motion is communicated to the shuttle. The feeder "slides in "a transverse slot in the work arm," and is also worked by a face cam. "By connecting the feeder to its lever by means "of a small bell crank it may be caused to feed longitudinally "instead of transversely when required, for instance, in sewing "the seam of a coat sleeve." The tension apparatus consists of "two plates pressed together by a light spring," between which the thread is passed. Two guides for sewing may be used, "one "on each side of the central needle hole;" by their use the machine "can quilt backwards and forwards without the necessity "for always beginning from the same end or edge of the fabric "to be quilted." A platform or table may be added to the work arm.

[Printed, 4d. No Drawings.]

A.D. 1865, February 21.—Nº 484.

BAULCH, CHARLES.—"Machinery for sewing or uniting leather and other hard substances." When it is desired to unite the sole and upper of a boot, the last, with the unsewn boot, is placed between holders on the machine. Two piercers working at an angle one to another, then descend through the sole and upper and enter a channel formed on the last. The piercers then rise and the needle is brought over one of the holes down which it passes. A wire or bristle is next passed down the other hole and into the eye of the needle. The needle then draws it up, when it is received by a holder on the surface of a drum, which rotates and completes the stitch, at the same time cutting off and straightening the end of the wire. This operation is again repeated to form the next stitch.

[Printed, 8d. Drawing.]

A.D. 1865, February 24.—Nº 527.

WINTER, WILLIAM. — (*Provisional protection only.*) — This invention "has reference to the feed motion of sewing machines, " and has for its object the simplification of such motions by "direct action as well as the obtaining at option a right or "left handed feed," that is to say, machines made after the

inventor's plan "may have the carrying foot and feed wheel placed "on either side of the needle, subject to the nature of the work "required."

[Printed, 4d. No Drawings.]

A.D. 1865, February 25.—N° 535.

STARLEY, JAMES.—Cylindrical feed motion. This feed motion applies to those machines "in which the work is supported on a cylindrical arm in which the shuttle or lower thread bobbin is contained." The inventor says,—"I form the feed ring on the casing of the outer end of the cylindrical arm, and drive both it and the casing by means of an axis passing through the arm centrally from end to end."

[Printed, 8d. Drawing.]

A.D. 1855, February 27.—N° 551.

BARCLAY, ROBERT.—In the improved sewing machine described in this Specification, the needle bar and feeding arm are worked in conjunction from a cam at the end of the driving shaft, supported above the machine. A pin on the cam works in a "heart-shaped quadrant" on the needle bar, and "the backward motion of the feed bar is accomplished by a projection on the needle bar acting through a small lever on the feed bar." The motion for working the shuttle is transmitted from the above-mentioned driving shaft by means of a connecting rod. Suitable tension holes are constructed in the shuttle.

[Printed, 1s. Drawing.]

A.D. 1865, March 4.—N° 601.

CLIFTON, HENRY EVERARD, and HOFFNUNG, ABRAHAM.—(*Provisional protection only.*)—The object of this invention is to provide apparatus by which "the proper longitudinal tension of the binding" and the correct fitting of it to the edge of the fabric may be secured. This binding apparatus consists of an "adjustable gauge," a "concave guide for the edge of the fabric," "two clamp guides for the edges of the binding, and "an adjustable tension bar."

[Printed, 6d. Drawing.]

A.D. 1865, March 18.—Nº 766.

ROBINSON, OWEN.—(*Provisional protection only.*)—This invention relates to that class of sewing machines known as shuttle or lock-stitch machines, and comprises,—

1. “Placing the wheel feed of a cylinder machine so as to work “on the right-hand side of the needle in lieu of on the left-hand “side as heretofore,” whereby the operation of “goloshing the “uppers” of boots and shoes may be more easily performed.
2. Driving the feed wheel, “whether such feed wheel be applied “to a cylinder or arm machine or to a platform machine,” by means of a crown ratchet wheel, into the teeth of which a spring pall, carried by a reciprocating lever, works.
3. “Placing a feed wheel of any suitable or well known construction with its axis transverse to or at right angles with the longitudinal axis of the arm or cylinder in that class of sewing machines, so that the material may be fed in the direction of the cylinder.”
4. “Lifting the presser foot after each stitch in those sewing machines wherein the wheel feed is employed in order to facilitate the turning of the work,” by means of a bell cranked lever worked by a cam.
5. “Actuating the shuttle-driver of lock-stitch machines,” by means of a connecting rod, jointed at one end to a lever worked by a face cam. The inventor also proposes “to place the shuttle “in its race with its nose pointing in the direction of the outer “end of the cylinder or arm, so that it shall catch the loop of “the needle thread when it is moving outwards or towards the “outer end of the arm or cylinder.”

[Printed, 4d. No Drawings.]

A.D. 1865, March 20.—Nº 776.

NEWTON, ALFRED VINCENT.—(*A communication from David Wood Green Humphrey.*)—“This invention relates to improvements on a machine described in the Specification of a Patent “granted to Amos Laurence Wood,” dated 3rd August 1864, No. 1932.

A moveable clamp holds the cloth in which it may be desired to work button holes, and the first portion of the Specification details the methods employed for communicating a variable feed motion to this moveable clamp. That is to say, “the range of

" feed motion given to the feed ring while working the eyelet of
" the button hole is required to be much greater than when
" working the straight parts of the button hole." "The pan-
" turing needle is operated up and down, and laterally, to pass
" alternately through the cloth and through the slit of the button
" hole." Below the table there is "a loop-carrier" working in
conjunction with the under thread carrier, and on the same shaft.
There are also two "loop openers for opening the loop of the
" needle thread and the loop of the under thread" respectively.

[Printed, 2s. Drawings.]

A.D. 1865, March 23.—N° 819.

MORRELL, ROBERT WILSON.—This invention relates to "the
" construction and arrangement of a machine for sewing and
" stitching, having a series of needles on one needle slide in com-
" bination with a series of duck bill crochet hooks working on
" one reciprocating shaft, each needle having its own hook."
" The same arrangement of needles may be each supplied with a
" shuttle race and shuttle for the purpose of sewing stitches with
" two threads." The whole of the shuttles so arranged are to
be actuated by one shuttle bar. The fabric is fed up to the
needles in such a manner that straight parallel lines are sewn,
but by communicating a transverse motion to the table "wave
" lines" may be produced.

[Printed, 1s. 10d. Drawings.]

A.D. 1865, March 24.—N° 830.

BAILLOT, ALFRED.—(*Provisional protection only.*)—The first
part of this Specification is descriptive of a machine intended to
make the "single thread stitch" the "double thread chain stitch"
and the "shuttle stitch." The desired stitch is made by bringing
into use one of the two hook needles, or the shuttle, all of which
are attached to the machine.

The remaining part describes a feed apparatus, in which "all
" the parts which require lubrication, and upon which the said
" feeder lever moves, being situated at the back end of the
" machine" the danger of staining the material with the lubri-
cating matter is much reduced.

[Printed, 4d. No Drawings.]

A.D. 1865, March 25.—N° 848.

SMITH, EARLE HARRY.—In this machine the actuating mechanisms of the needle and shuttle are arranged in such a manner “that the reciprocations of the parts of each shall be the reverse of those of the other, thereby neutralizing the tendency to vibration.” The machine is also so contrived “that at each upward draught upon the needle thread the shuttle thread shall be slackened (by the return motion of the shuttle or otherwise) sufficiently to allow a loop of the needle thread to be drawn above the cloth, such loop being afterwards drawn down and into the cloth by the movement of the shuttle.” The shuttle is cylindrical, and is constructed to receive the bobbin at the side. A curved wire regulates the tension therein.

[Printed, &c. Drawing.]

A.D. 1865, March 29.—N° 883.

WILSON, WILLIAM NEWTON.—This invention is divided into four parts, namely—

1. A lock-stitch machine. “The machine is driven by friction, and a small crank on the shaft having a pin or stud at its extremity operates the needle arm by a heart motion.” This same stud also works the shuttle by means of a “short straight lever” connected with the shuttle driver. “An inclined plane with a small projection instantly catches the friction wheel if turned in the wrong direction.

2. A knotted-stitch machine. In this machine the needle arm works on centres upon the bed plate, and is cranked below, “so as to be driven by a pin operating in a slot in the arm.” A cam produces the ordinary four motion feed, and also works the looper. A swell on the face of the cam also moves the looper laterally to distend the loop. To the treadle is attached “a leather or india-rubber joint in place of the iron hinge commonly used.” This joint requires no oil, and is noiseless in its action.

3. “A new form of arm-manufacturing machine.” “The arm containing the shuttle instead of being parallel with the fixed arm above, as is ordinarily the case, forms three sides of a quadrangle; the extremity of which approaches the fixed arm, and terminates immediately under the presser slide, being thus at right angles with the rest of the machine.”

4. "An adjustable hemmer and a new guide." The former is "a slotted plate having an inclined plane for the edge of the work, over which affixed by clips to the slotted part is another moveable plate with a curled edge" adjustable to the width of hem. The two plates are fastened by a screw to the bed plate. The guide is intended for machine No. 3, and is fixed to the presser slide.

[Printed, 10d. Drawing.]

A.D. 1865, April 12.—N° 1047.

BAPTY, FREDERIC, and SAYERS, EDWARD BRYDGES.—A "guide applicable to sewing machines." This invention consists in "the addition of a simple contrivance to the ordinary 'tucking 'guide' of any sewing machine." "One end of a spring is fixed to a part of the 'guide' furthest from the needle, the other end being attached by a joint or hinge to a foot or plate of metal in front of the 'guide.' The under surface of the foot is grooved or fluted at an angle or curve inwards; the material while being stitched passes under the 'foot.'" "The spring and 'foot' prevents too much material being thrust between the needle of the sewing machine and the 'guide,' and the fluting of the foot causes the material to be pushed or carried towards the guide in such a manner that many articles with straight or curved edges are kept up to the guide without any assistance from the person working the machine."

[Printed, 6d. Drawing.]

A.D. 1865, April 26.—N° 1166.

FAIRWEATHER, JOHN, and FAIRWEATHER, WILLIAM.—(*Provisional protection only.*)—This invention consists in communicating motion from the driving shaft of the upper needle or needles to the bottom needle or needles by a worm and worm wheel, and thus obtaining correct movement of the upper and lower needles. It also consists in rendering the needles "adjustable to different widths of work," by means of slides attached to the needle bars.

[Printed, 4d. No Drawings.]

A.D. 1865, April 26.—N° 1167.

MUMBY, GEORGE.—(*Provisional protection only.*)—This invention "relates specially to improvements on the shuttle or 'lock-

" 'stitch' sewing machine, for which Letters Patent were granted
 " to William Frederick Thomas, and dated the 14th September
 " 1855, No. 2079." The improvements consist, firstly, sewing
 " button holes, &c. " by giving to the foot of the 'feeder,' in
 " addition to the ordinary feed, a lateral reciprocating motion, in
 " combination with an 'expander' or instrument for keeping the
 " button hole open whilst in the act of sewing, and preventing
 " the edges being sewn together."

Secondly, "in embroidering cloth or other material" in such
 a manner "that the silk or other kind of thread, instead of being
 " wholly or partially on both sides of the material as hitherto
 " practised is employed only on one side, an inferior description
 " of thread being used on the other."

Thirdly, in "substituting a spring of vulcanized india-rubber
 " or other elastic material, for the steel spring employed to move
 " the 'feeder.'"

Fourthly, "in the application to the shuttle arm of the machine
 " of apparatus for forming either the 'single' or 'double thread'
 " or chain stitch," so as to enable the seams of sleeves and other
 " tubular work to be sewn with the 'knotted' or 'double thread'
 " 'stitch.' The apparatus being adjustable, either the above
 " stitches, or the 'lock' or 'shuttle stitch' may be used at
 " pleasure."

Fifthly, "in the peculiar construction of the feed apparatus of
 " those machines in which a rotary foot or 'feeder' is employed."
 " Instead of moving the material by the hand, as in ordinary
 " sewing machines, the 'feeder' receives at pleasure a circular
 " motion, so as to feed the material to any desired radius."

[Printed, &c. No Drawings.]

A.D. 1865, May 13.—N^o 1331.

CAIRD, JAMES KEY.—(*Provisional protection only.*)—Sewing over "the joints of any two or more pieces of cloth," by means of a "hollow spiral needle drawn by means of frictional rollers or in "any other suitable manner, one end of the needle being pointed "so as to enter the cloth intended to be stitched. As the spiral "needle revolves it is either caused to travel in a longitudinal "direction whilst the articles are being sewn," or the sewing apparatus is kept stationary while the materials travel. "As the "needle revolves it passes through those portions of the cloth "requiring to be stitched, and the thread being placed in the

“ needle, which is made hollow, it (the thread) is left in the hollow passage which the needle has formed.” “ A split is made throughout the whole length of the spiral needle, so that the thread may be placed therein with facility.”

[Printed, 4d. No Drawings.]

A.D. 1865, May 18.—Nº 1377.

LAING, JAMES.—(*Provisional protection only.*)—This invention relates to “ that class of sewing machines which are used for “ ‘ over heading,’ ” and consists partly in making the spiral needle used in such machines “ partly hollow or tubular and “ partly solid. The solid part of the needle forms fully one “ circle of it, and commences from the point, whilst the hollow “ or tubular portion extends throughout the remainder of its “ length, except a short piece at the further end, which is left “ solid.” Another feature in the invention is the feeding of the cloth by means of the needle. “ As the needle revolves its spiral “ form causes the cloth being sewn to be moved or to travel “ along.”

[Printed, 4d. No Drawings.]

A.D. 1865, May 19.—Nº 1384.

DE MORNAY, HENRY.—In order to assist the crank, used in driving sewing machines, over its dead centres, the inventor makes use of springs or weights so arranged that they will “ absorb and reserve during certain portions of each revolution “ of the crank a part of the power exerted by the operator, and “ will give out the power so reserved during certain other inter-“ mediate portions of each revolution in such a manner as to “ assist the crank over the dead centres.”

[Printed, 8d. Drawing.]

A.D. 1865, May 22.—Nº 1407.

CLEMENTS, JAMES MOORE.—This invention relates chiefly to stitching button holes, and it comprises improvements upon a former Patent of the same inventor, dated 31st March 1862, No. 901. The inventor claims—

“ An arrangement of mechanical appliances constituted to turn “ the cloth automatically as the needle is required to work the

" eyelet hole, or the circular head of a button hole, instead of " requiring the cloth to be turned by hand." " Supplying the " silk into the barbed hook, which works up through the bed of " the machine, and closing the barb that it shall not catch the " silk or work in its downward motion."

Finishing off the work by means of certain motions of the shuttle.—"The stitch being finished, the needle now descends, " enters the cloth upon its return motion, the loop it leaves is " taken up by a circular hook, the shuttle which was to the right " of the needle now passes to the left, whilst the barbed hook is " forming the first loop necessary for the shuttle to pass through " to the right hand. The barbed hook now forms the second " loop, the shuttle passes through to the left, and immediately " returns, thereby pulling up the purl or interlooping of the " threads perfectly upon the upper and under edge of the button " hole." Forming the shuttle with "a sinking upon its upper " and under sides," thus doing away with the lateral drag on the silk and enabling the shuttle to occupy completely the race.

" Attaching a sliding plate to the needle slide, somewhat after " the manner of the slide rest of a lathe," so that the position of the needle may be adjustable to suit varying widths of work.

[Printed, 1s. Drawing.]

A.D. 1865, May 25.—N° 1432.

MADDERS, WILLIAM.—"Ornamenting table cloths." The ornamentation is produced by lines of stitching, and also by "uniting cloths of different colour or material by edging stitches," after which the pieces are folded back "leaving the line of edging "stitches so as to form a seam in relief on the face of the fabric." Embroidery is also combined with these "edging stitches."

[Printed, 8d. Drawing.]

A.D. 1865, June 8.—N° 1566.

DRAPER, JABEZ.—(*Provisional protection only.*)—This invention consists in the employment of "a moveable lever tongue, "wedge, roller, ball, or other equivalent device in connection "with a fixed inclined plane or surface so placed that the driving "strap or band runs between the two; so long as the driving "strap or band travels in the right direction it runs perfectly "free, but the instant that an attempt is made to drive the strap

“ in the wrong direction (whether by accident or otherwise) it
“ becomes wedged or jammed fast by the action of the moveable
“ lever” or other instrument.

[Printed, 4d. No Drawings.]

A.D. 1865, June 9.—N° 1572.

HASELTINE, GEORGE.—(*A communication from Louis Planer.*)

—This specification comprises the following :—

“ A device which may be readily attached to any ordinary
“ sewing machine for lifting the presser foot during the time the
“ needle is in the cloth or material being sewed, which greatly
“ facilitates the manipulations of the material.”

Combining with the feed wheel of a sewing machine a feed dog,
a lever, and an arm, “ provided with an adjusting mechanism for
regulating the stitches.”

Constructing a braider “ with a yielding spring in the under
“ side thereof to rest upon and hold the braid in the centre of
“ the groove with a slight tension for the purpose of holding and
“ properly presenting the braid of varying widths to the action
“ of the needle.”

The combination of a braider with a lifting foot of a sewing
machine for sewing more readily curved and circular work or
“ turning corners.”

Making the driving pulley “ toothed or serrated ” so that the
belt cannot slip.

[Printed, 10d. Drawings.]

A.D. 1865, June 12.—N° 1584.

GLAZEBROOK, JOHN, MILLS, MARK NIELD, and MILLS,
BENJAMIN RILEY.—(*Provisional protection only.*)—The inventors propose to actuate the shuttle and needle of sewing machines by means of a crank working in a “ segmental or elliptical slot.” The feed motion is worked by means of “ a double tappet acting “ on a lever swivelling on a double joint and connected by “ springs to the feeding bar or cloth mover, which works in “ slot on the top of the shuttle box, the slot being placed at “ right angles to the shuttle race, the double tappet imparts “ to the lever the four motions requisite to move the feeding “ bar or cloth mover to and fro and up and down.”

[Printed, 4d. No Drawings.]

A.D. 1865, June 12.—N^o 1592.

HAYES, JAMES.—“The object of this invention is to work “needle and shuttle machines by means of eccentrics, and thus “to produce a smooth and rapid action of the moving parts.” As the opening out of the loop, which is usually done by the “dwell” of the needle in the course of its ascent, cannot be so performed by an eccentric, the loop is opened by acting on “the “elastic or spring thread guide.” The thread guide is held down while the needle is rising.

[Printed, 10d. Drawing.]

A.D. 1865, June 14.—N^o 1611.

KEATS, GEORGE EDWARD, and KEATS, JOHN.—“The first “part of this invention has for its object so to construct sewing “machines as to render them suitable for embroidering and for “stitching over the edges of button holes on the edges of fabrics, “and consists” in communicating to the serrated feeding plate a sideway motion in addition to the ordinary up and down and backward and forward motions. Thus a zig-zag line of stitches may be formed or the fabric may be so moved that the needle shall only pass through it at every alternate movement, the needle at other times passing beyond the edge of the fabric. The machine considered by the inventors to be best adapted to this kind of feed has two needles, one straight and working upwards from below, the other curved and working horizontally above the material. The stich is made by each needle alternately passing its loop through the loop of the other.

[Printed, 10d. Drawing.]

A.D. 1865, June 17.—N^o 1641.

HASELTINE, GEORGE.—(*A communication from John Jay Sibley.*)—This relates to mechanism “for making a three or more “threaded stitch, the first thread being carried by the “needle, the second by the bobbin,” and the third by an im-“proved thread carrier. In making the stitch, “when the loop “of the needle thread has been caught and spread upon the “rotating hook as usual in the ‘Wheeler and Wilson’ machine, “and the needle retracted, the under thread carrier passes through

" said loop of needle thread carrying its own thread back of the " track of the needle, thus introducing a loop of under thread " through a loop of needle thread. It remains in this position " until the needle has again descended, carrying its own thread " through the loop of the under thread, whilst the rotating hook " is securing and spreading this second loop of needle thread " (while it is yet spread upon the rotating hook), and carries its " own thread across the track of the needle as before."

[Printed, 8d. Drawing.]

A.D. 1865, June 20.—N^o 1661.

McGLASHAN, DUNCAN, junior.—Moving the needle, shuttle, and feed simultaneously by a system of shafts and wheels. By the arrangement described patterns may be sewn. A revolving table carries the shuttle race and the feed, and the whole system is so arranged that the shuttle and feed are always maintained at the requisite relative position with each other as well as the needle and presser.

[Printed, 10d. Drawing.]

A.D. 1865, June 22.—N^o 1678.

HASELTINE, GEORGE.—(*A communication from Thaddeus Hiram Walker.*)—The inventor claims—

1. "Combining with a reciprocating needle and four-motion feed," certain mechanism "for driving the shuttle in an elliptic path;"
2. Working the feed by means of an eccentric, the rod of which carries the roughened surface. By altering the position of the fulcrum point of this rod, that is, by sliding it up or down in a slot in the rod, the length of stitch can be regulated;
3. A tension apparatus consisting of two disc wheels, between which the thread is clamped, the friction on the thread being regulated by a coil spring and screw.

[Printed, 1s. Drawings.]

A.D. 1865, July 8.—N^o 1811.

WOODRUFF, GEORGE BALDWIN.—"Marking Tucks and Pleats." The inventor attaches to the "shuttle race slide of the sewing machine on to the cloth plate (by means of a clip, screw, or otherwise) a marker formed of a thin strip of steel

" with a raised edge or edges standing in a line parallel to the " line of stitching." By means of a suitably contrived " presser" this marker is made to act upon the cloth, thus forming a crease or a series of dots upon it.

[Printed, 1s. Drawings.]

A.D. 1865, July 11.—Nº 1835.

FOTHERGILL, BENJAMIN.—(*Letters Patent void for want of Final Specification.*)—Driving sewing machines by means of a "fusee" or a weight and cord, in combination with a train of wheels and a suitable governor or speed regulator.

[Printed, 4d. No Drawings.]

A.D. 1865, July 21.—Nº 1903.

WANZER, RICHARD MOTT.—(*A communication from John Tarbox.*)—"The chief object of this invention is to form stitches over "the edges of fabrics."

"The loops formed by the needle are taken after passing "through the fabric and carried over the edge by a vibrating "hook with a slotted point, the thread being left in such position "that the needle in its next downward motion will pass through "the loop, and form what is termed the over-edge stitch, or "‘over and over’ glove stitch."

The needle is also caused to perform the feed of the fabric, and at certain stages of the work the whole of the mechanism, except the main shaft and presser foot, moves to the right and left.

[Printed, 1s. 4d. Drawings.]

A.D. 1865, July 21.—Nº 1904.

SMITH, ALFRED.—The first part of this invention relates to certain general improvements in sewing machinery such as "putting "in and out of gear," preventing the movement lengthways of any secondary shaft by means of bosses on the shaft, fixing change cams upon the driving shaft by means of a spring catch which engages into a recess in the boss of the cam, and "an improved "thread grip and guide" for laying a thread or cord around a button hole, and acting like a "pair of pliers."

The invention also relates to improvements on the former Patent dated 2nd August 1864, No. 1923; which improvements consist, "in attaching to the pressing foot or to the shuttle box a spring "opener which divides the cut or hole in the material to be

" stitched to form a button hole ; also in applying an under feed " to the said machine and means for lifting the presser foot at " the proper time to allow the work to be turned freely on the " needle."

The invention also consists in " making and attaching to the " main shaft a double time and stitch cam, so that by simply " attaching or detaching one of them the machine can be used " as an ordinary sewing, button hole, elastic stitch or herring- " bone machine."

The inventor also proposes to cause the needle and shuttle to act twice in every rotation of the driving shaft, by placing a " double groove cam wheel " on the main shaft.

[Printed, 2s. 6d. Drawings.]

A.D. 1865, July 26.—N° 1941.

NEWTON, ALFRED VINCENT.—(*A communication from Isaac Merritt Singer.*)—This invention relates to improvements on former patents dated respectively 16th December 1863 (No. 3181), and 8th September 1864 (No. 2196), and consists in—

(1.) A " vibrating needle sewing machine with the oscillating " shuttle arranged on the end of the oscillating shaft. This " shaft extends through the shuttle disc or face, over which the " shuttle works, and allows of the shuttle being taken out and " replaced with facility."

(2.) A " new form of guide plate, by which the direction of " feed and length of stitch is determined. The ordinary sliding " or traversing bar which operates the feed bar carries a stud pin " at its under side, which pin enters a slot cut in the guide plate ; " this slot may have either a single or double incline. The guide " plate is secured to the under side of the table by a set screw, " and can be moved endways parallel with the bar, and secured " in such position that the stud attached to the traversing or " sliding bar will work on more or less of the inclined slot cut " in the guide plate, and thus make a longer or shorter stitch."

(3.) Various forms of throat plates, consisting of rings sur-
rounding the needle.

(4.) Forming the legs of sewing machine stands with hooks or
beaks at the top, which hooks or beaks fit in recesses in the table,
and when held by tie rods near the bottom press against the
outer face of the recess, thus constituting a firm support.

[Printed, 2s. Drawings.]

A.D. 1865, August 4.—Nº 2033.

WOODRUFF, GEORGE BALDWIN.—Binder for sewing machines. The inventor uses “in combination with the well-known “D-shaped guide which laps the binding over the edge to be “covered, the ordinary clip with its hooked ends for receiving “the edges of the binding.” This contrivance is adjustable in both parts, relatively one to another. The presser plate is secured to the table of the machine, or it may be independent of the table and form the foot of the ordinary presser bar.

[Printed, 10d. Drawing.]

A.D. 1865, August 9.—Nº 2067.

RUSS, BARNABAS, and GANDELL, EDWARD, the younger.—This invention relates to certain improvements in sewing machines, intended to enable bags and sacks to be sewn, and “to “produce a representation of the over and under stitch, so as to “protect the selvage edges of the work.”

It is proposed to employ double or single needles in combination with single or double shuttles, either for the purpose of producing a double row of stitches, “the one being an inner “continuous line of lock stitch, the outer stitch being the selvage “binder, or for the purpose of producing with one needle and “two shuttles a similar binding.”

“Other combinations of stitches may in like manner be effected “the needle either working simultaneously or with a reciprocating action, or one or both needles and needle bars oscillating “alternately and receiving the shoot of the double shuttles.”

By means of such machinery a “diagonal or zig-zag series of “stitches” can be made, “effecting a sewing and binding at the “same time.”

A method of “working sewing machines is by means of a “rotating shaft having a driving pulley at its extremity, and “actuating the needle bars and shuttles by means of eccentrics “and cams.”

Various methods of effecting “the backward and forward “motion of the needle bars” are described, and the application of compressed air to the propulsion of shuttles in sewing machinery is claimed by the inventors.

[Printed, 1s. 6d. Drawings.]

A.D. 1865, August 23.—N° 2165.

WILLIS, HENRY, and RICE, GEORGE.—Winders for sewing machines. According to this invention thread may be wound on the shuttle spool without removing the latter from the shuttle. This is accomplished by providing a hole at one end of the shuttle, or there may be holes at each end, into which hole or holes the end of the spindle of the winder is introduced. The winder has a slot to receive the end of the spool, and hold it while revolving. The improvements in winders consist in various mechanical contrivances for guiding the thread while being wound on the spool, so as to cause the thread to be wound uniformly. These contrivances consist of variously designed guides or tension plates, through a hole in which the thread passes. The tension plate moves backwards and forwards in a line parallel with the axis of the winder, thus guiding the thread as it is wound. Various methods of moving the guide are described. Instead of moving the guide it may be made stationary, and the winder be moved.

[Printed, 2s. Drawings.]

A.D. 1865, August 23.—N° 2169.

MACPHERSON, DANIEL.—This invention consists in the construction of “a shuttle having the general form of the frustum of a cone, with a space within it for holding a bobbin, and in the giving to this shuttle a rotatory motion, as on an axis within itself.” The action of this shuttle is such “as to take up the slack of the upper thread, and thus to supersede the use of springs, levers, or other such contrivances for this purpose.”

[Printed, 1s. 2d. Drawings.]

A.D. 1865, August 29.—N° 2218.

ZANNI, GEMINIANO.—(*Provisional protection only.*)—Obtaining motive power for sewing machines by means of clockwork or electro-magnetism.

[Printed, 4d. No Drawings.]

A.D. 1865, September 1.—N° 2253. (* *)

KNOWLES, ROBERT, and LINDLEY, JOSEPH.—(*Provisional protection only.*)—“Improvements in ornamenting and protecting

“ the edges of bed quilts, counterpanes, toilet covers, carriage rugs, and other similar coverings by edging, binding, or fringing by machinery.”

This invention is carried out by the use of “ a combination of two or more threads of silk, cotton, wool, or other suitable fibrous material for forming the edging, binding, or fringing ; one, both, or all of the said threads being either of the same or of a different colour to the article to be ornamented on its edge. One of the said threads forms the fringe or edging by being laid by suitable mechanism upon the edge of the covering in a zig-zag or plaited direction, whilst the other thread is used for securing the said fringe or edging to the article to be ornamented in contra-distinction to having the edging or fringe made separately, and afterwards sewn to the article to be ornamented.” The inventors mention that by using threads of different colours, “ a pretty effect and contrast to the colour of the covering may be formed ;” and they also mention that the machinery described in the specification of the Patent granted to Lindley and Taylor, No. 957, A.D. 1862, is suitable for the purpose of this invention as far as edging is concerned, but that for the purpose of forming fringe it would be necessary to alter the stroke of the cam which works the thread guide, so as to cause the nozzle of the latter to come beyond the edge of the fabric to be ornamented.

[Printed, 4d. No Drawings.]

A.D. 1865, September 6.—N^o 2287.

PURKIS, ROBERT ALLEE, and CALLAWAY, GEORGE.—(*Provisional protection only.*)—Feed motion of sewing machines. “ According to one arrangement the claw or feeding instrument is applied to a lever, which is supported and actuated to turn vertically on a centre or on centres of motion, whilst the claw or feeding instrument is supported upon an axis carried by the outer end of this lever, and has the desired progressive motion given to it at the times and to the extent desired by a stud or tappet from the needle motion or needle lever or arm.”

According to another arrangement the claw is stationarily fixed to a lever, such as that above referred to, or it is fixed to that lever by a hinge joint, and the necessary step-by-step motion is given to the claw by that lever, “ having a compound motion given to it on centres without sliding, by moving not only vertically on

" a centre or on centres of motion, but also radially or horizontally, or in place of such compound motion on centres, a ball-and-socket motion may be applied to this lever or arm."

[Printed, 4d. No Drawings.]

A.D. 1865, September 9.—Nº 2313.

HOSE, JOHN.—"An improved wheel feed." A groove is turned on the smooth part of the periphery of the feed wheel, and round it is lapped a metal band or a wire, the ends of which are connected to a reciprocating lever. When this lever is set in action, it tightens the band, "thereby causing it to bind upon the wheel, " and then turn it a regulated distance on its axle."

[Printed, 10d. Drawing.]

A.D. 1865, September 23.—Nº 2431.

HUGHES, EDWARD THOMAS.—(*A communication from Jean Louis Thenen.*)—This invention relates both to lock and chain stitch machines. The several improvements or modifications may be classed under the following heads:—

A combination of parts working with a discoidal shuttle, suspended without motion of its own.

The machine has a "vibrating compound looper," and in combination with the latter is an under side "take-up" contrivance. The feed is operated from above, the feeding foot being driven by a heart-shaped motion, and acting also as a presser foot.

A combination of two spindles or working shafts, the one operating the needle gear, and the other the bottom gear, in such a manner that they work at different speeds, thereby dispensing with the use of cams or eccentrics.

Overcoming the noise and friction experienced in the use of barrel cams by "making the cam walls or sides bevel or converging." Also by the use of the "improved 'compound' 'cams and 'compound' cam bowls," that is to say, the cam bowl is divided into two, so that one part shall run only upon the one side of the cam trough upon which it works, and the other part shall run only upon the other side upon which it works.

Obtaining true and square feed movements instead of rocking movements by attaching the feed surface to a suitable sliding frame. This is applicable to the "four-motion feed" also.

[Printed, 3s. Drawings.]

A.D. 1865, September 28.—N° 2498.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from John Nathaniel Tarbox.*)—These improvements consist, “first, “in the employment of a spring on the needle bar for the purpose of holding the thread tight above the needle while the needle is rising in its work; second, in the employment of a needle guide in the form of a bent bar with an eye through which the needle passes, for the purpose of giving stability to the needle, especially when working in leather and other heavy goods; and third, in the employment of a spring on the presser foot shaft in addition to the ordinary spiral spring, which spring is connected to the needle bar, and is operated by it to ensure the holding or forcing down of the presser foot while the needle is in the work.”

[Printed, 8d. Drawing.]

A.D. 1865, October 3.—N° 2532.

LAKE, WILLIAM ROBERT.—(*A communication from Henry Hudson.*)—This is a patent for a small and light machine to travel over the material, which must be stretched on a frame for the purpose. The machine is driven by the friction of the driving pinion on the fabric as the machine is moved forward by the hand of the operator, or it may be worked by a winch. The sewing is performed by means of a looper and curved needle, both piercing the fabric from the same side and thereby forming a simple loop or chain stitch. The needle is so shaped that in piercing the cloth it acts as a cam to draw forward the machine. Or two needles may be used, each carrying a separate thread, and so contrived that both needles, piercing the cloth from the same side, shall form a lock stitch.

[Printed, 8d. Drawing.]

A.D. 1865, October 5.—N° 2551.

HENRY, MICHAEL.—(*A communication from Joseph Louis Kieffer.*)—This invention relates principally to sewing machines for stitching button holes. The machine is so constructed according to these improvements that besides its feed motion “the foot and the plate on which the fabric rests have a to-and-fro motion, during which the needle may make two strokes, one

" in the fabric, another in the hole, and which may be doubled
" or extended, and the feed motion stopped to obtain two or
" more stitches at one place for fastening the threads. The
" stitching is thrown up and strengthened by carrying a continuous
" thread under it."

[Printed, 1s. Drawing.]

A.D. 1865, October 6.—N° 2579.

CROSBY, CHAUNCEY ORRIN.—Making ruffles or frills by the sewing machine. The strip of fabric, having been previously hemmed upon one edge, is introduced into the machine. The machine is provided with two threads, one of which is laid along the strip and sewn over by the other thread. After a certain number of stitches has been made a check is applied to the former thread and a clamp acts on the fabric. Consequently the stitches slip on the thread held by the check, and there being nothing to hold down the fabric for the space of one stitch between the presser foot and the clamp it will "full the fabric up into that place and form one "shirr;" "after this is properly formed, and "before the feed is complete, the clamp rises from the fabric "and at the same time the check rises from the second thread, "and the feed carries the fabric and second" (that is the loose thread) "thread with it to complete its (the feed's) move- "ment; the feed returns, and in its next forward movement "forms a second shirr in like manner as the first, and so on."

[Printed, 1s. Drawings.]

A.D. 1865, October 13.—N° 2649.

WOODRUFF, GEORGE BALDWIN.—This invention has for its " object the making of bags, sacks, working button holes, se- " curing or joining breadths of carpeting, and producing orna- " mental stitching for ornamenting various fabrics. In carrying it out two threads are used, a needle thread and a shuttle thread. A zig-zag or angular stitch is produced which passes over or round the selvage. This stitch is accomplished by means of a compound feed motion, in which the work is moved laterally at the same time that it is moved forward; or the fabric may be fed forward and the needle bar and looper or shuttle oscillated. "A " zig-zag stitch may be produced with one or two threads by " adopting the chain stitch and employing a looper, the com-

" pound motion of the feed being arranged in the same manner
" as when two threads and a shuttle are employed."

[Printed, 1s. 10d. Drawings.]

A.D. 1865, October 16.—N° 2666.

ROBERTSON, JOSEPH BUCHANAN.—"In lieu of the ordinary feeding eccentric or cam" the inventor places "one with a double action upon a countershaft set and kept in motion by a gearing communicating with the main shaft." One action of this eccentric or cam secures a lateral motion to the feeder, and the other action secures the progressive motion. To the front of the machine is attached a "moveable plate on which the cloth or other material to be stitched is to be placed." The cloth is pierced to receive the needle by "a stiletto or pick" actuated by suitable apparatus. A "vein or hem stitch" is produced by making "a constantly recurring series of operations consisting of one perforation and three stitches, of which the first is a stitch in a forward direction passing through the perforation; the second, a stitch to one side in a line at right angles with the direction of the first stitch and catching the hem; and the third a return stitch re-entering the perforation."

[Printed, 1s. Drawings.]

A.D. 1865, October 23.—N° 2740.

CLARK, WILLIAM.—(*A communication from Charles Rhodes Goodwin.*)—(*Provisional protection only.*)—This is a patent for an improved combination of parts, the whole constituting a double thread sewing machine. The needle reciprocates vertically, the carrier receiving its motion through a bell-crank lever. Another lever working horizontally beneath the table communicates an alternate reciprocatory motion to a pinion on a shaft carrying a horizontal looper. The under thread is threaded into the looper and is furnished with suitable tension apparatus. The length of stitch is regulated by a small hand lever. The needle thread is furnished with a tension apparatus similar to that applied to the under needle and it is also provided with a forked lever acting as a take-up.

[Printed, 1s. Drawings.]

A.D. 1865, October 24.—N° 2748.

NEWTON, ALFRED VINCENT.—(*A communication from Thomas John Halligan.*)—“Sewing machinery for using waxed thread.” The improved machine resembles in its chief characteristic the ordinary wheel feed shuttle machine. The vertical needle bar holds the needle and an awl for piercing the material. The needle is wedge-shaped at its point and is grooved on both sides, “which “grooves are connected by an inclined eye which is pierced as “near as possible in a line with the axis of the needle.” The shuttle is carried in an “open skeleton frame” which slides on fixed bars. “The outer portion of the carrier projects beyond the “point of the shuttle for the purpose of pressing back the point “of the needle out of the way of the shuttle into a recess” in a steel guide forming part of the throat plate. A set of ratchet wheels constitutes the feeding mechanism, and as each wheel has a different length of tooth, the length of feed may be altered by changing the ratchet wheel. “In drawing the stitches tight it is “important to prevent the shuttle thread from becoming slack.” For this purpose a flat spring, mounted on the under side of the table, bears on the thread and holds it against the drag of the tightening stitch. The thread is drawn through a bath of melted wax and through a perforated piece of india-rubber, which clears off the superfluous wax. “An additional wax cup may be placed “beneath the throat plate, into which the needle may dip at each “descending stroke.” Heat should be applied to all those parts of the mechanism which come into contact with the waxed thread.

[Printed, 1s. 6d. Drawings.]

A.D. 1865, October 26.—N° 2766.

BENNETT, LEONARD.—“An improved needle.” This improvement consists in tapering the needle towards the eye as well as towards the point.

[Printed, 6d. Drawing.]

A.D. 1865, October 28.—N° 2784.

WESTMORELAND, WILLIAM, and WESTMORELAND, EDWIN.—This invention consists in obtaining “a reversible “quadruple action of the feed apparatus in sewing machines” by means of cams and levers. The inventors employ “for moving “the shuttle driver lever or levers a cam cut with equal sides, so

" that the shuttle will operate as required whether the machine is
" driven backward or forward. The cam which effects the tra-
" versing of the feeding foot is likewise cut with equal sides, so
" that if the machine be moved backward or forward the material
" to be operated upon will be traversed forward or backward, the
" cam being cut with equal inclines on the side, the material will
" therefore be traversed to the right or left if the machine is set to
" traverse either way instead of being set to traverse to the front
" or back." The shuttle box is so constructed that the shuttle is
always maintained at the proper distance from the needle.
Various methods of applying the invention are described in the
specification.

[Printed, 8s. 6d. Drawings.]

A.D. 1865, November 11.—N° 2901. (* *)

SLATER, DANIEL.—"Improvements in cabinet furniture." In the first part is described "a revolving casing and shelves adapted " to the pedestals of wardrobes, sideboards, or sewing machine " cabinets." The top, bottom, sides, and back are framed together in the ordinary way; a circular casing with partitions and shelves revolves inside on pivots (at top and bottom) which " are " on a line with the front edges of the framing of the pedestal." A little more than one half of the circumference is a plain surface, veneered, or ornamented, or having a mirror embedded therein, which when closed up forms the front of the article. Or the inner casing may be stationary, and the outer frame, divided at the middle of the back, made to pass, one half to the right, the other to the left, "either half radiating on pivots or provided with knee " pieces at the rectangular parts of the outer casing, which knee " pieces will slide in a circular groove (or on friction rollers) cut " in the base or top of such casings." The patentee next details very fully dividing his subject into no less than ten chapters) his many methods of applying "retiring sliding doors" to various articles of furniture. The doors are formed of slats, and are employed sometimes alone, sometimes in combination with flaps and projecting shutters. He also describes his improvements in fastening porcelain knobs or handles to drawers and doors:—The shank is passed through a hole in the wood, its "dovetailed circular " end" projecting at the back, and a wooden collar "made in " two halves" is glued round the end. Or the shank is carried

through so far as to allow a wedge-shaped cavity to be cut in it; a wedge fills up the cavity and holds the knob by tightening its flange against the front of the drawer.

[Printed, 1^a. Drawing.]

A.D. 1865, November 14.—N° 2925.

BONNEVILLE, HENRI ADRIEN.—(*A communication from Frederick Emile Texier and Victor Texier.*)—An apparatus for threading needles. The needle is placed eye downwards in the apparatus, and a small hook, carried by a lever, is passed through the eye. The needle is thus held securely in the apparatus. The thread is now guided by means of a groove or channel into the hook. Then by pressing the opposite end of the lever carrying the hook the latter is withdrawn through the eye, carrying the thread with it.

[Printed, 8d. Drawing.]

A.D. 1865, November 18.—N° 2974.

CLIFTON, HENRY.—(*Partly a communication from George Snieder.*)—A sewing machine which may be used to produce plain sewing at one time or to sew over the edges of button holes or fabrics at another. In making the button hole stitch, a small hook, which has both a reciprocating rotary motion and also a rising motion, takes a loop of shuttle thread from the under to the upper side of the fabric; the needle then descends through this loop, and the shuttle completes the stitch by passing through the loop of the needle thread. To enable this machine to be used as an ordinary machine the hook is thrown out of action.

[Printed, 8d. Drawing.]

A.D. 1865, November 20.—N° 2988.

PITT, JAMES.—(*Provisional protection only.*)—Actuating the feeding foot of a sewing machine by means of a cone surrounding the needle bar. The cone is “placed in the revolving head of the machine and pressed down upon the end of a lever which actuates it, together with the feed mechanism, by means of a spiral spring around the needle bar. When the machine is in motion the side of the cone acts against an incline upon an intermediate lever, which lever actuates the foot and ensures

" perfect regularity in the length of the stitch at any required
" angle and upon any thickness of material which the machine is
" adapted for operating upon."

[Printed, &c. No Drawings.]

A.D. 1865, December 1.—N° 3079.

SINGER, ISAAC MERRITT.—" Improvements in sewing ma-
" chines, and in sewing or embroidering." These improvements
relate chiefly to mechanism for producing the shuttle stitch, and
" are more particularly adapted for sewing leather." The first
part consists in attaching to the lower end of a reciprocating bar,
working in place of the ordinary needle carrier, " a rocking
" clamp " carrying an awl or " piercer," and a notched piece of
metal called the " pusher." The " piercer " punches a hole in
the leather, and the pusher forces a loop of the thread down
through the hole. The shuttle then passes its thread through
the loop.

A method of " holding and driving " the shuttle is described,
and an " adjustable wedge " is placed under the shuttle " in order
" to increase or diminish the space for the passage of the thread "
according to its thickness. A shield is placed on the shuttle
driver to keep the needle back in a line with the face of the
shuttle, so that the latter cannot come into contact with the
needle. In arm or sleeve machines the shuttle may be caused to
oscillate in a perpendicular direction and " transverse to or across
" the arm, the shuttle being placed between the line of the needle
" and the end of the arm, so as to bring the line of the needle
" to within the thickness of the shuttle from the end of the arm,
" or thereabouts."

Another part refers to " an independent 'take-up' to act both
" ways, that is, to give 'slack' for the passage of the needle
" down through the goods and continue the slack thread until
" the shuttle is partly through the loop, and then to oppose the
" passage of the shuttle so as to lay the thread into or on the top
" surface of the goods or material;" this is effected by a double-
acting " spring which acts from the two extremes towards the
" midway position of the 'take-up,' or two springs would answer
" the same purpose." One portion of the invention also con-
sists " in having a revolving or turning ring round the 'throat'
" (or aperture through which the needle passes), presenting to

" the work or material a sharp V-shaped edge." A portion of this edge may be attached or detached at will.

The inventor's improved feed motion is designed to enable the material to be fed in any direction from the needle without stopping the machine. This object is accomplished by means of certain adjustable guide plates, into the grooves of which work pins connected with the "feed dog."

One of the improvements relating to embroidery, is applicable either to tambour or lock stitch machines. The thread is laid upon the upper surface of the material in the form of a figure 8 by means of fingers, and the descent of the needle secures the figure to the fabric. A second coiled thread may be laid on the under side and secured by the shuttle, so that both sides of the fabric will be alike. A further improvement in embroidering is effected "by passing a thread with its bobbin entirely round " the needle and its thread, so that the needle on its descent will " fasten down one side only of the coil (thus formed) to the sur- " face of the fabric. The ornament produced will be in the form " of a small helical coil laying on the surface of the material."

[Printed, 1s. 8d. Drawings.]

A.D. 1865, December 1.—N° 3086.

HEDLEY, HENRY, and AINSLEY, GEORGE.—" Improvements " in sewing machines."

The machine described in this specification is constructed to make the shuttle or lock-stitch. The needle slide and the feed, which is a "top-feed," are worked by cams. "The length of the "stitch is varied by a small lever connected with a small eccentric, which forms a variable stop to the lateral back movements "of the vertical feeding lever." The needle thread is tightened and slackened by a cam "on the driving shaft, which acts upon a "lever having its fulcrum on the jib, the thread passing through "or partly round two pins fixed in the jib and through or partly "round a pin in the end of the lever working between the two "fixed pins." The spool is placed horizontally on a spindle, having a pulley at one end, on which works a brake. The brake power is obtained through a weight which can be adjusted at various points on the brake lever. "The shuttle reciprocates in "the segment of a circle, and a tangent drawn from the central "part of the shuttle will be nearly vertical to the line in which

“ the cloth is fed, when the point of the shuttle is about to pass through the loop formed by the needle thread; but when the shuttle has passed through the loop a tangent from its central part will be about parallel to the line in which the fabric is fed.” Thus the “angle of the tip of the shuttle which acts upon the loop of the needle thread is much less obtuse than in the ordinary arrangement.” The shuttle is curved on one side to fit the race; the other side is flat, except at the tip, where it is bevelled slightly. The shuttle thread “passes from the reel, then round a bar secured to one edge of the lid of the shuttle, then to a shorter bar secured to the other edge of the lid, and the tension upon the thread is obtained by passing it round the second bar as many times as are necessary to produce the required tension, after which it passes through a hole in the side of the shuttle.” “The eye of the needle is made to pass obliquely through the needle, and the needle is without groove from the eye to the point of the needle, but has a groove above the eye on that side at which the thread enters, and a slight groove upon the opposite side.”

[Printed, 1s. Drawing.]

A.D. 1865, December 9.—N° 3170.

JACKSON, WILLIAM.—“Improved arrangement of the parts in sewing machines for using wax thread for sewing on the soles of boots and shoes.” The chief feature in this invention consists in passing the thread from the bobbin through the end of a rod, carried in the lower arm or horn, for the purpose of putting the thread in the barb of the needle. The needle bar and the looper bar work vertically and parallel to one another. The looper bar is worked by the needle bar through the agency of tappets. The looper bar is bent, and has a hole at its lower end “to permit the hooked needle to pass through it, and for the purpose of protecting the last preceding loop from being caught in the hook when sewing.”

[Printed, 1s. 2d. Drawings.]

A.D. 1865, December 12.—N° 3205.

KLOTZ, MARC.—“Improvements in sewing machine shuttles, and in the winding or reeling of the thread employed with them.”

The thread is wound in elongated balls without any solid interior support. The lines are juxtaposed instead of crossed. There are discs of leather or other material at the ends, and an envelope of paper or other fabric outside. The discs are sometimes dispensed with. The ball or cocoon is dropped into the shuttle, and is unwound from the inside to the outside. The shuttle is improved by the abolition of the "bearings or supports" which receive the ends of the asps or reels, the guide bar and "numerous holes formed in the top and bottom of the shuttle," which serve for unwinding regularly and guiding the thread, "and for increasing or lessening its tension conjointly with the modes of tension at present in use." The tension is regulated by means of a screw operated from the outside, without necessitating the removal of the shuttle from the machine.

[Printed, 8d. Drawing.]

A.D. 1865, December 13.—N° 3217.

SMITH, JAMES HENRY.—An invention termed by the patentee "a thread holder."

It consists of "a little sliding bracket-like piece, the horizontal limb of which comes immediately under the arm or guide projecting from the needle slide, through which the thread passes in its progress to the needle." This bracket is mounted "to slide in the same direction as the needle carrier, and it is brought back to a stop by a slight spring." The needle carrier and thread guide in descending, at a certain point come in contact with the bracket piece, "the thread then lying over it, in which position it nips the thread and holds it till the needle rises a certain distance," when the contact with the spring bracket is broken, the latter being limited in its motion by the before-mentioned stop.

[Printed, 10d. Drawing.]

A.D. 1865, December 14.—N° 3240.

LAKE, WILLIAM ROBERT.—(*A communication from Job Dawley and John Blocker.*) — (*Provisional protection only.*) — "Waxing thread in sewing machines."

"This invention is more especially applicable to double-thread sewing machines." The wax, "in a liquid or semi-liquid state, is supplied to a receptacle formed in the shuttle race at or near

" the needle thread. The upper or needle thread is carried at " each descent of the needle into this receptacle, and is thoroughly " saturated with the wax lying therein." Thus the wax is applied to the thread after it has passed all the tension devices. The shuttle thread collects a certain amount of wax in passing through the waxed loop of the needle thread, and pieces of felt or sponge are provided to prevent the wax collecting on the shuttle. The receptacle is kept supplied with wax by a suitable automatic apparatus.

[Printed, 4d. No Drawings.]

A.D. 1865, December 22.—N° 3309.

NEWHALL, RICHARD.—(*Provisional protection only.*)—Needle cases. The improved cases are made with a pad of some elastic material, as cork, at the bottom. The points of the needles enter into this pad, and are so preserved. The pad may be covered with a coating of fine emery powder attached by glue.

[Printed, 4d. No Drawings.]

1866.

A.D. 1866, January 9.—N° 61.

GUINNESS, WILLIAM STUART.—(*Provisional protection only.*)—This invention comprises the following improvements:—

Fitting "ribs" or "fins" to the shuttle or "under thread carriers," in order that the loop of thread may not rub over the surface of the shuttle or other thread carrier, but only on the ribs, and so save friction.

Certain improvements in the feed motion described in the specification of a Patent granted to the same inventor, and dated 28 August 1861, No. 2143. The feed lever, instead of being worked by a crank to which it was connected, is moved upward and laterally by a crank pin or eccentric working in a slot in it. A spring gives the downward movement. The feed plate "is formed so as to feed the work on three sides of the needle." Another modification is described, in which the feed lever is connected to the crank, as described in the previous specification, but the feed plate is differently attached.

An improvement on the tension apparatus also described in the previous specification :— The present contrivance consists of a lever, having a finger end which acts on the needle thread at a point between the eye of the needle and the work.

[Printed, 4d. No Drawings.]

A.D. 1866, January 15.—N° 132.

JOHNSON, ALBERT FRANCIS.—The present invention chiefly refers to such machinery as is used for sewing a heavy material, such as leather. The material is first pierced by a descending awl, which awl also feeds the fabric forward until the aperture arrives over the needle. The latter resembles a crochet hook, and works from below. As the awl retires the needle rises through the aperture in the leather or other material ; a curved finger then twists the thread round the hook, and the needle descends. A spreader then takes the drawn-down loop and opens it for the passage of the shuttle, which enters and passes through the loop “ in a direction contrary to that in which the material is fed.” The presser foot is adjustable to various thicknesses by means of a cam.

[Printed, 1s. 6d. Drawings.]

A.D. 1866, January 22.—N° 209.

WOODRUFF, GEORGE BALDWIN.—Improvements chiefly relating to the feed motion of sewing machines. “ The object of this invention is to produce a needle and shuttle sewing machine with a moveable table, which whether rotated by hand or automatically will so present the work to a top feed plate or wheel as to ensure the traverse of the work under the needle in any required direction while the motion of the feed plate or wheel is always maintained in the same plane.”

[Printed, 2s. 4d. Drawings.]

A.D. 1866, January 23.—N° 220. (* *)

BROOKES, WILLIAM.—(*A communication from Henry Smith.*)—“ Improvements in the mode of producing mechanical motion.” Amongst other purposes, this invention is “ applicable to clocks, watches, musical instruments, and automatical sewing machines.”

1st. "A new method of producing a regularly increasing or decreasing intermittent or other rotary motion." "In lieu of an ordinary gear wheel there is used one the teeth of which are formed or wound in the form of a spiral or volute. With this volute or scroll gear a pinion is made to engage, and power can be applied either to teeth formed on the periphery of the volute gear or to the spirally arranged teeth of the volute gear itself, the pinion that engages with the teeth of the latter being necessarily susceptible of such a motion as will allow the said pinion to both approach to and recede from the centre of the scroll rack." This part of the invention is the foundation of the subsequent parts.

2nd. "The application of the foregoing described apparatus to window shades for the purpose of operating them."

3rd. "An apparatus similar to the above described applied to window sashes for the purpose of operating them."

In the 2nd and 3rd improvements, the leverage afforded by the volute gear and its pinion exactly counterbalances the power of the spring, "so that the force exerted by the latter, instead of being as in ordinary cases variable, is always and uniformly the same."

[Printed, 1s. 2d. Drawings.]

A.D. 1866, January 24.—N^o 238.

HINCHLIFFE, GEORGE.—"A machine for 'saving' or covering the lists or edges of fabrics."

This invention relates to machines to be employed for covering the edges of fabrics to be dyed to prevent the edges from taking the dye. The preparation of fabrics for this purpose is ordinarily effected by hand labour by first turning or folding the edge over a cord, then a web of close woven fabric is folded over the edge and cord, and is stitched thereon by means of a needle and thread being passed through the fabric and around the web or cover.

The machine for this purpose comprises "a tubular guide or guides through which the list or edge of the fabric, with the cord and the web or cover, are caused to pass (a slit being formed in the guide or guides to allow the fabric to pass along), by which the list or edge and web are folded on the cord and placed in proper condition and position to be secured by thread

" or cord . . . The fabric with its list thus folded and " and covered, is drawn forward intermittently by a pair of " toothed rollers; a needle attached to a slidable bar . . . " passes thread or cord . . . through the fabric close to the " folded list or edge. On return of the needle a loop is formed " of the thread or cord, which is caught by a hooked carrier " having an intermittent oscillatory or partial circular motion " . . . by which the loop is carried around the covered list or " edge to the contrary side of the fabric and held in suitable " position for the needle at its next stroke to pass through the " loop and thus secure it. On the return of the needle another " loop is formed and caught by the hooked carrier (which has " also returned), and is again carried around the folded list or " edge to be secured by the next insertion of the needle.

[Printed, 1s. 4d. Drawings.]

A.D. 1866, January 25.—N° 247.

WINTER, WILLIAM.—(*Provisional protection only.*)—A feed motion for sewing machines.

This feed motion consists of "a 'ribbed holder' of the work " to be done, actuated firstly by the longer arm of a lever having " its centre upon the framework, and its shorter arm driven by " the principal cam of ordinary sewing machines. The 'holder' " above named moving freely on a pin at the end of the lever " and in a guide thus receives a vertical motion." A "slide rod " having a wedge-shaped extremity which passes between the side " of the 'holder' and the arm of the machine" imparts the " lateral transverse motion to the 'ribbed holder.' " "A small " spring is likewise used upon the centre pin, upon which the " 'holder' rests, causing it to return after the pressure of the " wedge lever is removed."

[Printed, 4d. No Drawings.]

A.D. 1866, January 30.—N° 295.

SMITH, ALFRED.—The present invention relates chiefly to a former invention described in the specification No. 1923, 2 August 1864.

The first part of these improvements consists in working the " feeding surfaces of the machine in different ways for different " purposes or stitches." The feeding lever works under the cloth

" plate, on a joint in line with the shuttle box, and is fastened to " the frame of the machine by a ball or universal joint." To the right of the joint the lever terminates in two arms, each of which is capable of being acted upon by a cam. " These cams are made " so that a portion is capable of being attached to and detached " from either of them as required, so that a part of them can be " removed at pleasure." Each cam, when it acts on the lever, produces a different stitch.

Another part refers to the " shuttle box," which is actuated through levers, by the cam which works the needle carrier; thus the movements of the two are synchronous.

The third part describes a " method of lifting the presser foot." " The bar to which the foot is attached carries at the top a lever " which overhangs the front of the machine. The needle slide " or the lever which works it, or a projection on either of them, " strikes in the up and down stroke the overhanging portion of " the lever, and raises or depresses it, whereby the pressing foot " is lifted from the work." The foot is returned, when liberated, by a spring.

[Printed, 8d. Drawing.]

A.D. 1866, February 2.—N° 331.

BARKER, GEORGE, and DAVIS, CHARLES.—Improvements in the feed apparatus of sewing machines.

This improvement consists in constructing the feed apparatus in such a manner that the foot shall feed in any direction. This is accomplished by mounting the foot " in a small frame which is " fitted on bearings, and oscillates or moves round axially to the " needle carrier and needle which perforates the material." The end of the pressure lever is made semicircular in form so that it shall bear on the foot in all its changes of position. In like manner the lever, which imparts motion to the foot, is made " somewhat of a circular form (described from the axis upon " which the 'foot' turns), so that the horizontal feeding motion " may be imparted to the 'foot' and claw in all its positions."

[Printed, 10d. Drawing.]

A.D. 1866, February 7.—N° 373.

C'LARK, GEORGE.—(*Provisional protection not allowed.*)—This is in many respects to a previous patent granted to the inventor,

namely, No. 1650, 20th June 1865. The whole relates to the manufacture of mats and other articles of fibrous materials by means of sewing machinery, the said fibre being contained in clip frames, and passed under the needle of the machine.

[Printed, &c. No Drawings.]

A.D. 1866, February 10.—Nº 421.

LAKE, WILLIAM ROBERT.—(*A communication from Nesbitt De Laney Stoops.*)—Castors for sewing machines. The castors described in this specification are constructed with a number of holes round their peripheries. When it is desired that the machine to which the castors are attached, shall be immovable, a small pin or catch, pressed down by a spring, is dropped into one of the holes in each castor, thus preventing it from revolving. When the pin is lifted out of the hole and secured in that position by partially turning it round, the castors can rotate and the machine may be moved.

[Printed, &c. Drawing.]

A.D. 1866, February 14.—Nº 475.

WILSON, WILLIAM NEWTON.—This specification may be divided into the following parts:—

1. The so called "Queen Mab" machine. This is a sewing machine making the chain or tambour stitch, and worked by hand. "The machine is driven by spur gearing, and a revolving " looper is attached to the lower shaft, which turns in a direction " opposite to the action of the feed. The feed and needle are " operated by cams from the upper shaft." The direction of the looper may be reversed by changes in the driving gear, thus increasing the speed.

2. This "applies to the class of machines known as the elliptic " lock stitch, and comprises a novel arrangement of winding " apparatus, consisting as follows:—To the outer extremity of " the pin or stud which gives the vibrating action to the needle " arm is attached a crank, corresponding in length with the dis- " tance of the pin before-named, from the centre of the driving " shaft; to the other end of this crank is screwed or riveted " a taper shaft or spindle, which thus receives a rotary motion, " the axis corresponding with that of the driving shaft." The bobbins are placed on this shaft to be bound.

3. "An improved cording apparatus" for the last-named machine consists "of a spring so attached to a metallic presser foot as to always retain the cord tight and in its right position for the needle."

4. "An improved form of knotted stitch machine" in which a cam gives horizontal reciprocating motion to a rack working a pinion, which, in its turn, actuates a curvilinear looper. The vibrating arm is worked by a connecting rod, from a crank pin on the main shaft.

5. A machine called "the triplex machine." The shuttle has a "reciprocating action in a circular race," and the feed, which is an upper one, moves at pleasure in three different directions, viz., "to the right hand up the arm of the machine, at right angles with the operator, and thirdly, to the left hand directly from or off the arm of the machine."

[Printed, 1s. 6d. Drawings.]

A.D. 1866, February 16.—N° 495.

PATERSON, JOHN.—Folders for sewing machines. One pattern is thus described:—"The folder consists of a thin plate, the folding edge of which is parallel with the line of feed of the fabric, except that it is cut away at the part where the fabric first arrives, in order to facilitate the entrance of the fabric. The folder forms the head of one half of a strip or piece of metal of U shape, the curved portion of which extends to the front of the machine, and the other arm terminates in a plate reaching behind the folder. This plate forms the guide, and is secured to the work plate by screws which pass through slots in the guide, so that it is adjustable together with the folder to regulate the width of the plait to be sewn."

Another form of folder consists of two plates or strips of metal, one secured to the cloth plate and the other to a fixed support somewhat above the level of the table. The unsecured ends of these two strips are interlocked, or turned in upon one another, only leaving a space between them for the passage of the cloth. Thus the cloth is folded into three thicknesses.

[Printed, 8d. Drawing.]

A.D. 1866, February 17.—N° 508.

WILLIS, HENRY, and RICE, GEORGE.—"Converting rotary motion into reciprocating motion." The inventors carry out

their object by means of two toothed wheels gearing into one another. One of the wheels has "an hour-glass figure, or nearly the shape of the numeral 8. The other, the rotary motion of which is to be converted, is of "a nearly elliptical figure, its longest diameter being about twice its shortest diameter." To the axis of the hour-glass wheel, or to the wheel itself, a crank is attached, the said crank being in the direction of the largest diameter of the said wheel." A connecting rod joined to this crank communicates the required motion.

[Printed, 8d. Drawing.]

A.D. 1866, February 27.—N° 600.

ZANNI, GEMINIANO.—"Self-acting sewing machines." Under this patent the inventor proposes to drive sewing machines by means of clockwork, or electro-magnetism.

[Printed, 2s. 2d. Drawings.]

A.D. 1866, March 14.—N° 768.

GUTTERIDGE, RICHARD.—(*Provisional protection only.*)—This is a plan to make the ordinary feeding "foot of the 'Singer' machine into a vibrating one. The upper free end of the common foot is lengthened by a bent arm carrying a jam nut and headed vertical screw parallel with the side of the foot; this screw, by being raised or lowered, throws the foot in and out of gear with the ordinary cam that drives it, which is always on the machine."

[Printed, 4d. No Drawings.]

A.D. 1866, March 16.—N° 788.

PILLING, ALTHAM.—This invention refers to a lock stitch sewing machine, in which the stitch is made by the joint operation of a needle and a rotating hook. The needle carrier is actuated by the horizontal driving shaft, through suitable connecting links, in such a manner that the following motions are communicated to the needle, viz.:—"a descent, rise, rest, second descent, and second rise." The "spool carrier or disc" is fixed at the end of the above named revolving shaft. In front of this "carrier" is a "cup or disc" called the spool driver. The spool is held between the inside of this "spool driver" and the front of the "carrier." The hook is fixed to the inside of the spool driver.

To obtain an adjustable tension on the spool thread, "a hole is drilled in the centre of the spool, round which hole are drilled several other holes through which the thread is passed or re-passed, but always issuing when working from the hole in the centre." The feed motion is obtained by a cam raising a toothed "dog" at the required moment. The needle thread is wound round a "barrel," connected with the needle carrier levers, so that by their movement the barrel is also moved, thus acting as a take-up and tension device.

[Printed, 1s. 8d. Drawings.]

A.D. 1866, April 28.—N° 1201.

ROBERTSON, JOSEPH BUCHANAN.—This invention consists in a contrivance "for better effecting the French vein or hem stitch work by machinery." Instead of feeding the fabric laterally as well as progressively, the needle itself is moved in a lateral direction, "the fabric being moved only in a direct line." "The lateral motion of the needle is effected either by means of a lever jointed to the needle arm, and to one end of which the lever is attached, so that the stroke of the needle falls upon one side or other of the edge of the fold, according as the opposite end of the lever is elevated or depressed, or by causing that part of the machine which carries the needle slide to move in a lateral direction bearing the needle along with it."

[Printed, 1s. Drawings.]

A.D. 1866, May 4.—N° 1270.

BARTRAM, WALKER BATES.—A machine for sewing button holes. In this machine, the cloth plate, cloth holder, and cloth are moved laterally at every stitch by means of a ratchet wheel and eccentric rod, and a spring. Thus the needle passes at one time through the cloth and at the next through the aperture of the button hole.

[Printed, 1s. Drawings.]

A.D. 1866, May 8.—N° 1323.

HENRY, MICHAEL.—(*A communication from Joseph Reinmann.*)—(*Provisional protection only.*)—The sewing machine described in this specification works in the following manner:—"When the driving shaft revolves the needle bar is depressed and passes

" the needle through the fabric and then below. When the " needle bar rises it takes the needle with it, and the hook being " worked by the sector and toothed wheel passes through the " loop." This hook "twists the back part of the loop forward " and the fore part backward, and thus gives the needle thread " a twist round the shuttle thread, which strengthens the stitch." The thread, after being twisted, is "brought round the box of " the lower bobbin, whereupon the piece which lifts the upper " thread acts and brings the lower thread against the fabric; " meanwhile the feed action lever works the foot and moves the " fabric the length of a stitch, which is regulated by a screw."

[Printed, 4d. No Drawings.]

A.D. 1866, May 9.—N° 1331.

ESSEX, HENRY.—Sewing needles. The object of this invention " is to make the needle stiffer and stronger without increasing " the amount of material employed." To effect this, the body of the needle is made triangular or prismatic in form. "The point " end is of the usual cylindrical and tapering form; and the eye " end of the needle is also round, the prismatic portion of the " needle being about half its entire length, more or less."

[Printed, 6d. Drawing.]

A.D. 1866, May 16.—N° 1391.

BARTLETT, JOSEPH WEATHERBY.—The nature of this invention consists—

Firstly, in the arrangement of "feeding mechanism employed " in both single and double loop-stitch machines." The movement of the feeder is obtained by a cam on the rocking shaft.

Secondly, "in the peculiar means employed in the double " thread machines for giving the rocking shaft a longitudinal " reciprocating motion for extending the third loop."

Thirdly, "in the mode of supporting the table, whereby it can " be swung back from over the looper and other parts, which are " thus left uncovered and readily accessible for threading the " looper and for other purposes."

Fourthly, "operating the rocking shaft by an excentric in such " a manner that the driving shaft can be turned in either direction " without affecting the motion of the other parts of the " machine."

[Printed, 1s. 4d. Drawings.]

A.D. 1866, June 20.—N^o 1653.

BOWEN, ABRAHAM.—This machine is worked from a horizontal driving shaft, at one end of which is the driving pulley, and at the other end are the cams working the shuttle bar and feed motion. “ The cams working the shuttle bar are two, each operating upon “ a friction roller fixed at the opposite ends of a bar oscillating “ upon a centre hung in a bracket upon the casting or standard ; “ this oscillating bar is attached at its upper end to a vertical “ rod, which is again attached at its lower end to a jointed shuttle “ bar, and thus an intermittent or dead stop to-and-fro action is “ given to the shuttle, allowing it to rest whilst the loop is being “ formed by the needle, and again whilst the needle ascends to “ pull up the shuttle thread. A third cam upon the shaft works “ the feed motion, which in this instance consists of a moveable “ plate working between the cloth presser and the shuttle.” Common beads are inserted into “ the thread lever and thread “ lifter, and all other apertures through which the thread must “ pass in its passage to the needle as a preventive of abrasion of “ the thread.” It is also suggested to make shuttles in one “ piece, by stamping them in dies ; “ or they may be cast in “ malleable iron and afterwards converted into steel.”

[Printed, 10d. Drawing.]

A.D. 1866, June 22.—N^o 1664.

SMITH, WILLIAM.—“ Improvements in the manufacture of “ trimmings and in the machinery employed therein.”

A number of shuttles, according to the pattern required, carry their threads round other threads and wires, by means of which a device or pattern is formed. This is then laid upon the fabric, which is to form the body of the trimming, and stitched upon it. The inventor is also able to make this ornamental fabric without the use of any groundwork.

[Printed, 10d. Drawing.]

A.D. 1866, June 26.—N^o 1699.

HOLLISS, CHARLES PEACHEY.—“ Improved modes of applying “ packing of elastic or flexible materials to axletrees, springs, and “ bearings of railway and other carriages, to rails, chairs, and “ sleepers, and to frames of machines, for isolating them from “ contact, and preventing noise.”

The inventor makes use of any elastic packing, and amongst other applications he mentions that to "the frames of machines, " and to other parts of machinery." He applies the packing " between the floor, foundation, or table, and the supports, legs, " or frame, the bolts being packed with rings." He claims the application of such elastic packing to sewing machines.

[Printed, 1s. 4d. Drawings.]

A.D. 1866, June 29.—N° 1736.

CLARK, WILLIAM.—(*A communication from Ernest Auguste Bourry.*)—"Embroidering machinery." "The object of these " improvements is to combine and operate a number of sewing " machines simultaneously, producing what is known as the chain " stitch for the purpose of embroidering." When applying more than one machine to the same piece of fabric, the turning of the fabric in making curved lines of stitching is no longer admissible. The present invention then consists "in imparting a rotary movement to the parts feeding the material, as also to the sewing " machines employed in combination with the embroidery apparatus, with the object of making the stitches in any direction " independent of the motion of the machine."

[Printed, 1s. 8d. Drawings.]

A.D. 1866, July 5.—N° 1779.

NEWTON, ALFRED VINCENT.—(*A communication from James Alford House and Henry Alonzo House.*)—Improvements in sewing machinery, chiefly relating to sewing button holes. "In adapting " the Wheeler and Wilson machine to the sewing of button holes " the following modifications are effected :—The mechanism for " feeding and vibrating the cloth under the needle, and turning " it, is carried by a vibrating bed plate which is fulcrumed at one " end on the table of the machine; this mechanism receives its " motion from a spooling pin screwed into and forming a continuation of the main driving shaft; upon this spooling pin a " switch cam is mounted, and into the grooves of this cam enters " a swivelling switch, which is carried by a jog bar (or sliding " bar) mounted in guides in the under side of the table; the " rotation of this switch cam gives an endway motion to the jog " bar, from which the vibrating motions of the cloth are derived." The vibrating bed plate is fitted with a disc plate pierced for the

needle. This disc plate is connected with the sliding plate "to
" which the clamp for holding the cloth is attached, and by which
" the cloth is traversed to and fro under the needle ; this sliding
" plate is intended to receive a semi-rotation when one side of the
" button hole is completed." "The axial motion is given to the
" sliding plate by means of a hand lever."

A modification is described by means of which a button hole
can be finished on both sides without turning the fabric ; also
another modification for sewing button holes automatically.

In order to ensure that the cloth shall be held rigidly at the
point where it receives the stitches, the inventor proposes to sur-
round the opening in the table, through which the needle passes,
with a ring of india-rubber. The material to be stitched is to be
pressed upon the rubber and held tightly to receive the stitches.

The last improvement relates to the Wheeler and Wilson hook ;
" the perimeter of this hook is nearly circular, while the body of
" the hook varies in thickness so that when the hook draws the
" loop of the needle thread to spread it and pass it round the
" shuttle bobbin the loop may pass smoothly off the hook. . . .
" To enable the loop of needle thread to pass the presser pad
" more easily, and when passed to escape lightly from the hook,
" the back of the hook is chamfered so as to relieve it from bearing
" against the whole surface of the presser pad."

[Printed, 2s. 4d. Drawings.]

A.D. 1866, July 7.—N° 1798,

CLARK, WILLIAM.—(*A communication from Elias Howe, junior.*)
—This invention comprises the following :—

A tension apparatus consisting of "a disc with a many-cornered
" groove formed by series of wings turned out alternately in
" opposite directions in combination with a clamping screw,
" spring, and flannel belt or other soft substance on each side of
" the disc.

Slitting the sides of the eyes or loops through which the thread
is guided, so that the thread may be introduced into the eyes
" laterally instead of endways" and so facilitate the operation of
threading the machine.

Slotting the bottom end of the needle bar with a segmental slot
extending almost down to the needle socket, so that the thread,
being introduced into the said slot, can be made to extend close
down the side of the needle from the needle bar.

Making the head which carries the needle bar adjustable "in and "out and back and forth," so that the needle can always be brought "vertically in the proper position towards the shuttle."

"A spool holder with a flexible elastic back and "flaring end "pieces in combination with a cavity in the shuttle," so that the spool can be sprung into or removed from the spring holder with ease.

A tension spring with a slotted eye for the shuttle thread.

Operating the feed wheel by means of a slotted dog in such a manner that "by moving the feed lever in one direction the dog "is caused to gripe and bend on the rim. by moving "the feed lever in the opposite direction the feed wheel is released "and permitted to remain stationary."

[Printed, 1s. 4d. Drawings.]

A.D. 1866, July 18.—Nº 1874.

SALAMON, NAHUM.—(*A communication from Amasa Bemis Howe.*)—Feed motion of sewing machines.

"The object of this invention is to enable the wheel feed of "sewing machines to be displaced by a reciprocating feed and "replaced at pleasure according to the work required to be per- "formed by the machine,"

[Printed, 1s. Drawings.]

A.D. 1866, July 18.—Nº 1876.

TOLHAUSEN, FREDERICK.—(*A communication from Emil Cajar and Charles Sichel.*)—"Improvements in sewing and button-hole machines, viz., "A stitch regulator which is secured to a rising "and falling slide occupying the place of the presser foot in "ordinary sewing machines, and which acts in conjunction with "the needle thread in such a manner that the feed of the fabric "to be sewed is produced by the action of the needle thread."

An "arrangement of two longitudinally sliding bobbins, one of "which carries the lower thread and the other the gimp, in com- "bination with a hook or looper and with suitable spool holders, "in such a manner that by the combined action of the hook and "spool holders the loop of the needle thread is first drawn over "one and then over the other bobbin, and the lower thread and "the gimp are interlaced with the loop of the needle thread." Several details of mechanism are described and claimed.

and derives "all the motions from straight-acting levers and
" links."

[Printed, 1s. 4d. Drawings.]

A.D. 1866, July 23.—N° 1908.

KIMBALL, ALONZO.—"Improvements in sewing machines," as
the following :—

"Arranging the presser foot so that it can be worked either as
"a stationary or as a vibrating one."

A thread controller consisting of a lever worked by a cam
independently of the needle slide."

"Actuating the ordinary wheel feed" in such a manner that
"the feed takes place sharply just when the shuttle begins to
"return, and is completed before the shuttle has performed much
"of its return stroke, and before the needle begins to redescend."

Arranging the spooling pulley "so as to be put into gear by
"the inserting of the spool."

[Printed, 1s. 2d. Drawing.]

A.D. 1866, July 25.—N° 1936.

WOODRUFF, GEORGE BALDWIN.—The inventor communicates
a "rapid and silent lateral motion to the vertical needle for the
purpose of producing herring-bone and transverse stitching,"
in such a manner that the needle always pierces the cloth per-
pendicularly. He also provides a suitable movement for the
shuttle race, so that the shuttle always corresponds to the needle.

The second head of the invention relates to an improvement
on the inventors' patent, No. 1811, of 1865. "In place of the
"knife-edged marker and the adjustable slotted presser, which
"together form the crease," the patentee fits "upon the rocking
"presser arm a presser which terminates in two inclined spring
"jaws; these jaws as the presser is forced down upon the work
"as it lies flat upon the table will close upon the work and nip
"or crease it. When the presser is released from pressure the
"jaws will open and release the work and allow it to be fed
"forward. A repetition of this action of the presser will produce
"a creased line upon the work," which will mark the width of
tucks or pleats to be sewn.

[Printed, 2s. Drawings.]

A.D. 1866, July 26.—Nº 1947.

HUBBARD, JOHN PAGE, and ADAMS, CHARLES.—This is a patent for a machine in which the stitch is formed by carrying the loop of the needle thread "around the under or locking "thread." The under thread is carried, in the form of a cop or ball, in a hollow cylinder, which has a projecting hook at the side. The needle descends close to the side of the cylinder and the hook draws the loop over the cylinder. The feeding foot, which presses over the material from above, is so constructed that it may be turned round the needle so that it will feed in any required direction. Its movements are obtained directly from the needle bar.

[Printed, 10d. Drawing.]

A.D. 1866, July 27.—Nº 1953.

ORR, JOHN.—"Improvements in ornamental weaving, and in "apparatus employed therein."

The first part of this invention refers to the production of "that class of brocaded or embroidered fabrics, in the weaving of "which brocading shuttles and apparatus are used." In such apparatus "the shuttle threads are the ornamenting threads," whereas according to this invention, "the shuttle threads are "used to draw ornamenting warp threads into sheds opened "to receive them, the swivel shuttle threads becoming longitudinal "threads in the fabric." In working this part of the invention, the embroidering threads are "drawn through harness and reed "in like manner to ordinary warp threads," or they "may be "arranged to pass over or under the end, and they are placed "at one side, say for description sake the right side of the strips, "sprigs, or ornaments they are employed in forming. Each "swivel or brocade shuttle contains a bobbin or pîrn filled with "thread in the ordinary way, which thread, however, is used not "as embroidering material, but to form a selvage thread at one "side of each sprig or ornament. In working the shed for the "swivel or brocade shuttles is formed by the jacquard or other "suitable apparatus in the usual way, the swivel or brocade "shuttles are moved through the shed, from, say left to right, "passing the embroidering threads at the right side of each "sprig, and the shuttles are then sent back, their threads being "looped round the embroidering threads, by which the em-

"broidering threads are drawn into the shed in a looped or "doubled form, and are held at the left side of each sprig or "pattern ornament by the tension of the shuttle threads, which "is to be sufficient to draw the ornamenting threads through the "shed, when the succeeding ground shot of weft fastens the "ornamenting threads into the fabric."

Another part of the invention consists "in what may be called "an improvement of the ordinary lappet frame principle of pro- "ducing ornamental weaving, and consists in the said lappet "frame being used in combination with double sheds, and being "caused to execute similar work to that usually performed by "the use of the swivel frame and shuttles. . . . The difference "of work produced by the two systems consists in this, that by "the ordinary lappet process the embroidering material is only "fastened to the ground fabric at the outlines or edges of the "figures produced, being then looped round the ground weft, "while the embroidering material actuated by swivel or brocade "shuttles is passed over some and under other portions of the "warp, and is thereby ingrafted into the fabric, being thus "rendered more durable and having more the appearance of hand "embroidery. By the present improvement . . . the embroidering "material is carried by the lappet needles by preference above "the fabric, the points of the needles moving downwards into "the shed, and the ornamenting material is in weaving an ora- "ment caused to pass underneath portions of the warp and over "other portions of the warp, thus uniting the qualities of the "two systems of weaving before referred to."

The remainder of the specification has reference to a new method of weaving pile into fabrics such as carpets, hearthrugs, &c.

[Printed, &c. No Drawings.]

A.D. 1866, July 30.—N° 1964.

GREENWOOD, THOMAS, and KEATS, WILLIAM.—Machinery for the manufacture of boots and shoes. A part of the specification is taken up with the description of a machine for sewing leather, in which a barbed needle descends through the material into the centre of a pinion, which carries the lower thread. The pinion is worked by a vertical shaft in a hollow upright post, and by its revolution, winds the lower thread round the vertical hook. Another part describes a method of "communicating motion to

" the working parts of the sewing machine by means of a pulley
" or wheel on an intermediate shaft mounted in bearings in a
" framing which is capable of rocking or moving, so that the
" periphery of the pulley or wheel may when required be brought
" into contact with a wheel on the main shaft of the sewing
" machine." A new kind of last is described, and in the
provisional specification a machine for "skirving" leather is
alluded to.

[Printed, 1a. 6d. Drawings.]

A.D. 1866, August 4.—N° 2017.

DIMOCK, IRA.—(*A communication from George Lynden Jencks.*)—In this sewing machine the loop of needle thread, after the needle has descended through the fabric, is seized by a horizontal rotating hook and passed round a flat horizontal shuttle, resting on a bed somewhat above the rotating hook. The operation of the shuttle is regulated by a tilting bar or finger, that is to say, by its use the shuttle is held "in one position with its thread " delivery next to the needle," and it is also maintained in its " central position against the face of the loop of needle thread in " passing round the extreme point of its diameter." A take-up apparatus is provided so that the stitch may be completed in "one " and the same cycle of operations," and suitable thread guides are fitted in combination with a tension apparatus.

The invention further relates to the mode of "hanging and " adjusting the needle arm and the 'presser arm,'" and to the " construction and arrangement of the 'cloth bridge' and its " appendages," and "to the mode of securing the needle to the " needle arm."

[Printed, 1a. 2d. Drawings.]

A.D. 1866, August 9.—N° 2053.

JUDKINS, CHARLES TYOT.—(*Provisional protection only.*)—A machine "for producing the chain stitch." A horizontal shaft under the bed plate of the machine, carries two cams, one of which serves to work a bell crank lever with the needle, and the other communicates a reciprocating motion to a horizontal rack. This rack in its turn rotates a pinion which opens the loop of needle thread, "and holds it until the needle again descends." To produce a double chain-stitch a needle working horizontally is sub-

stituted for the hook. By the alternate movement of the pinion, this horizontal needle carries its thread through each loop formed by the upper needle thread. A third cam works the feed motion.

[Printed, 4d. No Drawings.]

A.D. 1866, August 13.—N° 2069.

COWPER, EDWARD ALFRED.—This is an invention by means of which fabrics which have become worn and are usually repaired by darning, may be strengthened or thickened. This is accomplished by placing over the thin part, a frame holding a number of threads, which are then secured to the fabric by means of a sewing machine. The frame is further provided with a number of small joints which serve to hold and distend the fabric upon which the threads are to be sewn. The tambour or chain stitch machine used in the operation is so combined that it may readily be made to sew in either direction, or the work may be fed backwards and forwards instead.

[Printed, 2s. 6d. Drawings.]

A.D. 1866, August 17.—N° 2112.

WOOD, AMOS LAWRENCE.—(*A communication from William Chicken.*)—Machinery for working button holes. The material is held between clamps, which are moved about so that the edges of the material are brought under the action of the needle. These clamps are moved or “fed” in the following manner:—Under the cloth plate is a horizontal plate having cogs on its periphery. Near it is a smaller cogged feed wheel which engages with the cogs on the plate before mentioned. The small feed wheel is horizontal and recessed on one side. In this recess rotates an eccentric, and by means of a wedge which is periodically interposed between the periphery of the eccentric and the inside edge of the recess the feed wheel is rotated, at the same time moving the larger wheel and through it the clamps. The motions of the feed wheel are variable, so that the clamps are turned with a sudden increase of speed. The clamping apparatus is so constructed that, after the material is inserted, by moving an eccentric lever, the jaws are distended and the fabric tightened or strained. “After the needle has been carried down and is being raised the “needle arm tends to draw the needle thread up with it,” and if it does the forming of the required loop with the needle thread

" below the cloth is sometimes prevented." To obviate this fault the needle thread is gripped at the beginning of the upward movement of the needle.

[Printed, 10d. Drawing.]

A.D. 1866, August 20.—N^o 2136.

TAYLOR, WILLIAM.—Various improvements in sewing machinery, viz.:—

Fitting a "bar or roller of small diameter" to the shuttle, for the purpose of adjusting the tension of the thread. The bar is perforated across its diameter with a hole through which the thread is passed. The required degree of tension is obtained by turning the roller more or less round by means of a key, and so twisting the thread more or less round the roller.

Working the shuttle continuously in one direction through an elliptical path.

An under-feed, in which the serrated plate is connected with the cam that works it by a lever that is caused to bear constantly against the surface of the cam. The length of stitch is regulated by varying the position of the fulcrum of the lever.

[Printed, 1s. 4d. Drawings.]

A.D. 1866, August 27.—N^o 2202.

NORTHROP, JONATHAN.—(*Provisional protection only.*)—“Fringing and trimming shawls.” The object of this invention is to obviate irregularity in the work, and with this view the inventor supplies two guides, one of which forms “a hem or “turnover preparatory,” and the other regulates the depth of the fringe or trimming from the edge of the shawl.

[Printed, 4d. No Drawings.]

A.D. 1866, September 1.—N^o 2251.

BILLIOTTE, EDMOND VINCENT.—(*A communication from Jules Doderet.*)—(*Provisional protection only.*)—“An improved “needle case or holder.” This needle case has “a small india-“rubber or cork cushion mounted on a metal or other plate, “which moves up and down inside the case by means of a shaft “connected to the cushion.” While the case is open the needles or pins in the cushion will be spread out in a fan shape and so facilitate selection.

[Printed, 4d. No Drawings.]

A.D. 1866, September 21.—N° 2419.

GOODAY, GEORGE ONLEY.—“ Improvements in the manufacture of thatch and in machines or machinery for producing the same, which machines are also applicable for binding, sewing, and stitching purposes generally.”

The inventor prepares a portable thatch of straw by “ stitching together at or near the edges and centre in straight, curved, or other lines so that it can be rolled up and steadily fixed and be moved from place to place as required.” The sewing may be done by machines of the ordinary construction, “ but in order to obviate the necessity for passing the thatch or matting or other material over the table more than once ” a machine designed by the inventor is used. In standards at each side of the table is supported a transverse needle shaft. Upon this shaft are two adjustable cams or eccentrics carrying the needles. As the needle shaft turns, there also turns with it a ratchet wheel and pawl for moving the feed rollers or rollers and spiked bands. “ The upper needles work through transverse slots in the table, and are fitted with guides adjustable upon a transverse carrier, and the lower needles with their respective hooks are also adjustable. “ The lower needles are also fitted upon a transverse bar or slide for that purpose ” and suitably operated.

The needles may be made to slide or travel laterally by hand while the material is being sewn and so produce a waved or zig-zag stitch.

[Printed, 10*d.* Drawing.]

A.D. 1866, October 9.—N° 2610.

BRADBURY, GEORGE FRANCIS.—(*A communication from Thomas Antoney Macaulay.*)—(*Provisional protection only.*)—This invention consists in applying a needle or thread carrier to the cloth plate of a lock stitch sewing machine, which needle or carrier will “ carry its thread through the loop formed by the rotating or elliptic hook ; ” and when it withdraws from the loop it will leave the “ loop of its own thread upon the piercing needle.” Thus the same machine can be made to produce three different kinds of stitches.

[Printed, 4*d.* No Drawings.]

A.D. 1866, October 9.—N^o 2611.

McCURD, CLAVERHOUSE ALFRED.—(*Provisional protection only.*)—This specification comprises the following improvements.

Firstly, "a machine for forming the lock stitch," having at its lower part a horizontal shaft, one end of which works the needle carrier, the other carrying the looper or actuating the shuttle.

Secondly, "mechanism for sewing from two ordinary reels "without re-winding." This machine has an upper horizontal shaft, one end of which works the needle slide while the other moves an eye pointed looper below the bed of the machine.

Thirdly, "a method of rendering the stitch in chain-stitch "machines secure." To effect this a thread is passed through an eye in the base of the looper. The eye-pointed needle in its descent, "takes off its last loop (which looper has been detained by "the looper) and also" takes off "the thread the looper carries."

Fourthly, a tension apparatus for the lower spool or bobbin, consisting of a "sliding shaft," which does not revolve, and having at its "inside end" "a flange or disc for exerting pressure "against the spool or bobbin. A helical spring coils round the "shaft and presses at one end against the bearing the shaft "works in, and at the other against a nut which is either fixed or "working on a screw cut on part of the shaft."

Fifthly, an arrangement of lock stitch machinery. Two revolving shafts, geared by bevel wheels, one of which shafts is horizontal the other vertical, work the needle slide and shuttle.

Sixthly, a modification of the above, in which three revolving shafts are used, two horizontal, one above the other, and the third vertical and connecting them.

Seventhly, a shuttle machine worked by an upper horizontal shaft. One end of the shaft moves the needle, the other works the shuttle through suitable connections.

Eighthly, "mechanism for producing the lock stitch or the double lock stitch. To produce the "single lock stitch the needle "after every descent has the under thread once passed through "its loop, it then rises and the feed comes into operation and "moves the fabric sufficient to form the length of stitch. To "form the double lock stitch the needle pierces the fabric and "then recedes," but the fabric is not fed forward "until the "needle has again pierced the fabric at the same spot as before, "when the under thread is again passed through its loop."

Ninthly, feeding the cloth by means of the needle and moveable needle bar, the use of springs being dispensed with.

Tenthly, certain lock stitch machinery in which the upper and lower horizontal shafts revolve with the same velocity.

Eleventhly, a hand lock stitch machine, having a horizontal driving shaft in its lower part. One end of this shaft has a rotating hook and bobbin, or instead the arrangement for working the shuttle described under "firstly." At the other end is a spur wheel gearing into another spur wheel above it. "On the inside "face of the upper wheel is a groove in which a ball friction "roller at the right-hand end of a lever works." This lever carries the needle.

Lastly, a modification of the above.

[Printed, 4d. No Drawings.]

A.D. 1866, October 10.—N° 2617.

WARWICK, JAMES.—This invention consists in so constructing sewing machines that by certain alterations in the four-motion feed several distinct sorts of stitches, as the lock-stitch herring-bone stitch, embroidery stitch and others, may be produced.

[Printed, 1s. Drawings.]

A.D. 1866, October 11.—N° 2624.

PIDDING, WILLIAM.—(*Provisional protection only.*)—This invention consists in preparing the points of threads for sewing, by stiffening them with some starchy or gummy compound. They are then easier to pass through the eyes of needles, or they may be used as substitutes for needles. In the latter case the inventor proposes also to protect the points by a metallic sheath, or strengthen it by the addition of a bristle. He provides winders or cushions for use with such prepared threads and substitutes for needles. The fabric to be sewn is dressed with some stiffening material and perforated for the passage of the thread. He also describes a guide for passing the threaded needles, or their substitutes, through the perforations, which consists of a row of small funnels, or of one funnel moved from hole to hole by machinery. Finally the inventor makes use of magnetism or electro-magnetism to draw the needles or metallic points through the perforations.

[Printed, 4d. No Drawings.]

A.D. 1866, October 11.—Nº 2630.

NEWTON, ALFRED VINCENT.—(*A communication from Elias Howe, junior.*)—This invention relates to certain improvements intended to facilitate the threading of machines, also to improvements in lifting and turning the presser foot. “Instead of fitting “the face plate of the guide box (in which the needle bar slides) “with eyes of bent wire to guide the thread down to the needle, “headed pins are used round which the thread is laid as it passes “to and from the spring thread controller.” A stud with a nick in it projects from the needle slide and keeps the thread clear of the grease on the needle bar. “The needle bar is slotted vertically near its lower end to receive the thread and guide it vertically down to the eye of the needle.”

The presser is operated by a lifter which is fitted with two inclined planes, “one of which serves to lift the presser as usual, “while the other by continuing the action of the lifter gives the “presser bar an axial movement to turn the presser foot away “from the needle.”

[Printed, 8d. Drawing.]

A.D. 1866, October 20.—Nº 2718.

HASELTINE, GEORGE.—(*A communication from Lewis Budd Bruen.*)—This invention “relates to the combination of certain “devices with that class of sewing machines in which an elliptical “hook is employed in forming the stitch, and the object of the “said invention is to adapt the said machines to the forming “of the stitches known as the double-loop and three-thread “stitches.”

[Printed, 8d. Drawing.]

A.D. 1866, October 23.—Nº 2740.

HASELTINE, GEORGE.—(*A communication from Henry William Fuller.*)—This invention relates to an “attachment for sewing “machines” described in the specification No. 1641, 17 June 1865; “the said attachment being designed as an addition to the “well-known ‘Wheeler and Wilson’ machine With this “attachment double-loop or three or more thread stitches can be “made by the said ‘Wheeler and Wilson’ machine.” And the present improvement consists “in so combining the said attachment with the cloth plate employed that the ordinary ring slide

" of a 'Wheeler and Wilson' machine may be used instead of "the ring slide described in the specification" of the former Patent.

[Printed, 8d. Drawing.]

A.D. 1866, October 29.—N° 2785.

HOPKINS, MESHACH, and HOPKINS, ABEDNEGO DAVID.—The inventors purpose to do away with the use of cams in working the needles of lock-stitch machines, and instead to produce the required movement by means of a crank or eccentric, the rod of which passes through an "oscillating gudgeon or slide." One end of the rod is joined to the excentric or crank and the other end is connected with a vibrating link attached to the needle slide. By this improvement greater regularity of movement and freedom from noise is said to be obtained.

[Printed, 10d. Drawing.]

A.D. 1866, November 1.—N° 2829.

HENDERSON, THOMAS.—The inventor claims the following improvements :—

" Constructing the feed arrangement in that class of machines " known as elliptical sewing machines, so that the feeding teeth " are situated both in front and back of the needle, by which " arrangement a more perfect feed is obtained than hitherto."

" Driving the needle arm by eccentric motion, the eccentric " being placed on a shaft driven by a belt underneath the table."

" Governing the motion of what is known as the elliptic hook " by a piston or plunger working in a cylinder, instead of a con- " necting rod, whereby greater steadiness of motion is obtained."

" Fixing the "bobbin holder" to "the front instead of at the " side, by which arrangement the bobbin is more easily got at for " removal or replacement."

[Printed, 10d. Drawing.]

A.D. 1866, November 21.—N° 3059.

HASELTINE, GEORGE.—(*A communication from Myron Perry.*) —Castors for sewing machines. The plate or frame to which the roller is secured is turned upwards at the side of the leg of the sewing machine table. Thus a roller of much larger diameter

than usual may be employed without raising the machine to an excessive height above the floor.

[Printed, 62. Drawing.]

A.D. 1866, December 4.—N° 3185.

SANG, EDWARD.—(*Provisional protection only.*)—This invention relates to a “lever or other holder actuated by a spring,” which holder leaves the thread free to be drawn off the reel at the proper time, which is usually when the needle has reached its greatest depth through the cloth.

[Printed, 42. No Drawings.]

A.D. 1866, December 8.—N° 3246.

ARMSTRONG, FRANK.—(*Provisional protection only.*)—This invention alludes to “an adjustable device designed as an attachment to the so-called ‘Wheeler and Wilson’ sewing machine, which device being secured upon the said machine will operate in combination therewith to produce the well-known ‘Grover and Baker’ or double loop stitch, and also a three-thread stitch.”

The improvement consists in so constructing the parts of the above-mentioned “attachment” that it can readily be adjusted “without requiring the removal or adjustment of the ordinary ring slide, cloth plate, or other parts.”

The invention also relates to “an adjustable support for the under thread spool in combination with the under thread carrier and guide, whereby the proper tension of the under thread is preserved.”

[Printed, 43. No Drawings.]

A.D. 1866, December 14.—N° 3284.

LINDLEY, LEONARD, and TAYLOR, FREDERICK.—(*Provisional protection only.*)—The first part of this invention relates to a method of communicating “a compound or elliptical motion” to the shuttle, by mounting the carrier “upon a crank pin carried by the cam or lower shaft of the machine. A projection from the shuttle carrier is by pin joint connected to one end of a link, the other end of which is pin-jointed to a suitable part of the framing of the machine.”

The second part describes an improvement on a previous patent dated April 4th, 1862, No. 957. This improvement consists in a new method of "carrying and giving motion to the guide or guides employed for traversing one or more threads or their equivalents on the upper side of the fabric."

[Printed, 4d. No Drawings.]

A.D. 1866, December 15.—Nº 3305.

CAMPION, WILLIAM.—"Improvements in machinery or apparatus for linking, joining, turning off, and clearing looped or knitted fabrics, applicable also to stitching machines."

In the machines first mentioned it has been usual to cast the needles or points employed therein in sets of two or more of them in leads, and to secure them to the rotating ring or cylinder of the machine," which makes it difficult or inconvenient to replace a broken needle. The present invention, the object of which is to remedy the evil, consists "in soldering or otherwise securing each needle or point in a plate of brass or other metal." Each such plate is then placed in a "saw gate or space made in the outer vertical circumference of the ring or cylinder; these plates are securely held in the same by the upper portion of each plate hooking upon and projecting over the upper edge of the ring or cylinder;" secondly, the needles or points are secured "in the lower end of a rocking or swinging lever, which lever carries a stud or pin actuated by an eccentric cam; this lever also has a rising and falling motion communicated to it in addition to, and in combination with, its to-and-fro movement, which rising and falling motion is communicated by a second cam operating upon an arm or lever carrying an axle upon which the first-named lever swings or rocks."

[Printed, 1s. 10d. Drawings.]

APPENDIX.
~~~~~A.D. 1790, July 17.—N<sup>o</sup> 1764.

SAINTE THOMAS.—“An entire new method of making and com-  
“ pleating shoes, boots, spatteredashes, clogs, and other articles by  
“ means of tools or machines also invented by me for that purpose,  
“ and of certain compositions of the nature of japan or varnish,  
“ which will be very advantageous in many useful applications.”

The sheet of drawings attached to this Specification illustrates,  
among other things, a machine “for stitching, quilting, or sewing.”  
No reference occurs in the Specification itself to this machine, and  
the title of the Patent does not direct attention to it. The Speci-  
fication having consequently been overlooked in the preparation  
of this volume, an abridgment of it is now supplied in the form  
of an appendix.

This machine makes the ordinary “tambour” or “chain stitch.”  
As illustrated and described in a few lines on the drawing itself,  
it performs its work by means of a vertically working awl, which  
pierces the material, and a forked needle which passes the thread  
through the hole. A “spindle” fitted with projections conveys  
the thread to the fork or needle, and then acts with the reciprocating  
hook below mentioned to retain the loop until the needle has  
interlaced the stitch with another loop. All these instruments  
are worked by cogs on a revolving spindle, which cogs are adjust-  
able according to the nature of the material and quality of the  
stitch. The work is placed on, or stretched over a frame called  
the “table,” which slides in grooves and is moved by means of  
a screw shaft and cogged wheel. A screw guide regulates the  
distance of the stitching from the edge of the fabric or material.  
A reciprocating hook is fitted to the machine, for the purpose of  
drawing the thread on the under side of the material and holding  
it until the next stitch is taken. This hook is worked by a pro-  
jection on the spindle above mentioned.

To make the stitch, a hole is pierced by the awl. The thread  
is then laid over the hole by the spindle and projection, and forced  
through it by the needle, which has no point, but a semicircular  
fork or notch at its end. The needle then rises and leaves part

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of the thread in the form of a loop in the material. This is seized by the reciprocating hook beneath. The material is then caused to advance the distance of a stitch, is again pierced by the awl, the thread forced through the material and through the loop already formed by the previous stitch; and the above movements are repeated.

Boots and shoes may be sewn with this machine.

[Printed, M. Drawings.]

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**NOTE.**

The following additions are required in the indexes to the volume:—

In the Index of Names, page x, second column, after the second name insert: "Saint, Thomas, 364\*."

In the Index of Subject Matter, under "Boots and Shoes," "sewing," "Cloth plate or table," "Feeding apparatus," "Guide," "sewing," "Looper," "Needle, notched," "Perforating instrument," "Sewing machines, single thread," "Thread carrier," place "Saint, *Appendix* 364\*," first in the list of names respectively.

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**ERRATUM.**

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| Paisley ( <i>Government School of Design, Gilmour Street</i> ).                  | Wolverton ( <i>Railway Station</i> ).                                           |
| Plymouth ( <i>Mechanics' Institute, Princes Square</i> ).                        | York ( <i>Lower Council Chamber, Guildhall</i> ).                               |
| Preston, Lancashire ( <i>Dr. Shepherd's Library, the Institution, Avenham</i> ). |                                                                                 |

The Commissioners' publications have also been presented to the following Public Offices, Seats of Learning, Societies, British Colonies, and Foreign States :—

| <i>Public Offices, &amp;c.</i>           |                                                        |
|------------------------------------------|--------------------------------------------------------|
| Admiralty—Director of Works' Department. | Ordnance Office—Pall Mall.                             |
| Chief Constructor's Department.          | Small Arms Factory, Enfield.                           |
| Chatham Dockyard.                        | War Office, Pall Mall.                                 |
| Sheerness ditto.                         | India Office.                                          |
| Portsmouth ditto.                        | Royal School of Mines, &c., Jermyn Street, Piccadilly. |
| Devonport ditto.                         | Dublin Castle, Dublin.                                 |
| Pembroke ditto.                          | Record and Writ Office, Chancery, Dublin.              |
| Artillery Institute, Woolwich.           | Office of Chancery, Edinburgh.                         |
| Board of Trade, Whitehall.               |                                                        |

#### *Seats of Learning and Societies.*

|                          |                                                  |
|--------------------------|--------------------------------------------------|
| Cambridge University.    | Queen's College, Galway.                         |
| Trinity College, Dublin. | Incorporated Law Society, Chancery Lane, London. |

#### *British Colonies.*

|                                           |                  |                                               |
|-------------------------------------------|------------------|-----------------------------------------------|
| Antigua.                                  | India—Bengal.    | Prince Edward Island.                         |
| Barbados.                                 | Bombay.          | South Australia—Colonial Institute, Adelaide. |
| British Guiana.                           | Madras.          | Tasmania.                                     |
| Canada—Library of Parliament, Ottawa.     | N.-W. Provinces. | Trinidad.                                     |
| Bureau of Agriculture, Toronto.           | Jamaica.         | Victoria—Parliamentary Library, Melbourne.    |
| Board of Arts and Manufactures, Montreal. | Malta.           | Patent Office, Melbourne.                     |
| Cape of Good Hope.                        | Mauritius.       | Public Library, Melbourne.                    |
| Ceylon.                                   | New Brunswick.   |                                               |
|                                           | Newfoundland.    |                                               |
|                                           | New South Wales. |                                               |
|                                           | New Zealand.     |                                               |
|                                           | Nova Scotia.     |                                               |

*Foreign States.*

- Argentine Republic—Buenos Ayres.  
Austria—Handels Ministerium, Vienna.  
Belgium—Ministère de l'Intérieur, Brussels.  
Musée de l'Industrie, Brussels.  
France—Bibliothèque Nationale,  
Conservatoire des Arts et Métiers, } Paris.  
Hôtel de Ville,  
Germany—Alsace—Société Industrielle, Mulhouse.  
Bavaria—Königliche Bibliothek, Munich.  
Gotha—Ducal Friedenstein Collection.  
Prussia—Gewerbe-Akademie, Berlin.  
Königliche Bibliothek, Berlin.  
Königliche Polytechnische Schule, Hanover.  
Saxony—Polytechnische Schule, Dresden.  
Württemberg—Bibliothek des Musterlagers, Stuttgart.  
Italy—Ufficio delle Privative, Florence  
Netherlands—Harlem.  
Russia—Bibliothèque Impériale, St. Petersburg.  
Spain—Madrid.  
Sweden—Teknologiska Institutet, Stockholm.  
United States—Patent Office, Washington.  
Astor Library, New York.  
State Library, Albany.  
Franklin Institute, Philadelphia.  
Free Library, Boston.  
Library Company, Philadelphia.  
Library Association, Chicago.  
Peabody Institute, Baltimore.  
Historical Society, Madison, Wisconsin.  
Cornell University, Ithaca, N.Y.  
Mercantile Library, St. Louis.

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Grants of complete series of Abridgments of Specifications have been made to the undermentioned Mechanics' Literary and Scientific Institutions:—

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| Aberystwith ( <i>Literary and Working Men's Reading Room</i> ).<br>Alnwick ( <i>Scientific and Mechanical Institution</i> ).<br>Altringham ( <i>Altringham and Bowdon Literary Institution</i> ).<br>Ashby-de-la-Zouch ( <i>Mutual Improvement Society</i> ).<br>Bacup ( <i>Mechanics' Institution</i> ).<br>Ballymoney ( <i>Town Hall</i> ).<br>Banbridge ( <i>Literary and Mutual Improvement Society</i> ).<br>Barbury ( <i>Mechanics' Institution</i> ).<br>Barnstaple ( <i>Literary and Scientific Institution</i> ).<br>Bath ( <i>Athenaeum</i> ).<br>Battley ( <i>Mechanics' Institution</i> ).<br>Battle ( <i>Young Men's Christian Association</i> ).<br>Belfast ( <i>Athenaeum</i> ).<br>Berkhamsted, Great ( <i>Working Men's College</i> ).<br>Birmingham ( <i>Birmingham Heath and Smethwick Working Men's Club and Institute</i> ).<br>——— ( <i>Bloomsbury Institution</i> ).<br>——— ( <i>Central Lending Library</i> ).<br>——— ( <i>Deritend Working Men's Association</i> ).<br>Birmingham ( <i>Graham Street Institution</i> ).<br>Bodmin ( <i>Literary Institution</i> ).<br>Bolton ( <i>Mechanics' Institute</i> ).<br>——— ( <i>School of Art</i> ).<br>Bradford, near Manchester ( <i>Bradford Working Men's Club</i> ).<br>———, Yorkshire ( <i>Library and Literary Society</i> ).<br>——— ( <i>Mechanics' Institute</i> ).<br>Brampton, near Chesterfield ( <i>Local Museum and Literary Institute</i> ).<br>Breage, Cornwall ( <i>Breage Institution</i> ).<br>Bristol ( <i>Athenaeum</i> ).<br>——— ( <i>Institution</i> ).<br>——— ( <i>Local Library Society</i> ).<br>——— ( <i>Library</i> ).<br>Bromsgrove ( <i>Literary and Mechanics' Institute</i> ).<br>Burnley ( <i>Mechanics' Institution</i> ).<br>——— ( <i>Literary Institution</i> ).<br>Burslem ( <i>Wedgwood Institute</i> ).<br>Bury St. Edmund's ( <i>Mechanics' Institution</i> ).<br>Canterbury ( <i>Working Men's Club</i> ).<br>Cardiff ( <i>Free Library and Museum</i> ).<br>Cardigan ( <i>Mechanics' Institute</i> ).<br>Carharrack ( <i>Literary Institute</i> ).<br>11 |
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- Carmarthen (*Literary and Scientific Institution*).  
 Cheltenham (*Literary and Philosophical Society*).  
 —— (*Permanent Library*).  
 —— (*Working Men's Club*).  
 Chertsey (*Literary and Scientific Institution*).  
 Chester (*City Library and Reading Room*).  
 Chesterfield (*Mechanics' Institution*).  
 Chichester (*Literary and Philosophical Society*).  
 —— (*Literary Society and Mechanics' Institute*).  
 Coalbrookdale (*Literary and Scientific Institution*).  
 Cockermouth (*Mechanics' Institution*).  
 Colchester (*Literary Institution*).  
 —— (*Young Men's Christian Association*).  
 Compstall (*Athenaeum*).  
 Coventry (*Free Library*).  
 —— (*Institute*).  
 —— (*School of Art*).  
 Crediton (*Working Men's Club*).  
 Dartmouth (*Mutual Improvement Society*).  
 Deal (*Deal and Walmer Institute*).  
 Denton (*Denton and Haughton Mechanics' Institution*).  
 Derby (*Mechanics' Institution*).  
 Devonport (*Mechanics' Institution*).  
 Dewsbury (*Mechanics' Institution*).  
 Doncaster (*Free Library*).  
 —— (*Great Northern Mechanics' Institute*).  
 Dorchester (*County Museum and Library*).  
 —— (*Working Men's Institute*).  
 Dudley (*Mechanics' Institution*).  
 Dukinfield (*Mechanics' Institute*).  
 —— (*Village Library and Reading Room*).  
 Dumfarton (*Philosophical and Literary Society*).  
 Dumfries (*Mechanics' Institution*).  
 Durham (*Mechanics' Institution*).  
 Eagleby, Bolton-le-Moors (*Library and Institute*).  
 Earliestown, Newton-le-Willows (*Mutual Improvement Society*).  
 Edinburgh (*Horological Society*).  
 —— (*Mechanics' Library*).  
 —— (*Philosophical Institution*).  
 —— (*Royal Society of Arts*).  
 —— (*Royal Scottish Society of Arts*).  
 —— (*Subscription Library*).  
 —— (*Watt Institution and School of Art*).  
 —— (*Working Men's Club*).  
 Egremont (*Literary Institute*).  
 Egremont (*Mechanics' Institution*).  
 Exeter (*Devon and Exeter Institution*).  
 Faversham (*Institute*).  
 Frome (*Literary and Scientific Institution*).  
 Gainsborough (*Literary, Scientific and Mechanics' Institute*).  
 Garforth, near Leeds (*Working Men's Club*).  
 Glasgow (*Athenaeum*).  
 —— (*Central Working Men's Club and Institute*).  
 —— (*Institution of Engineers in Scotland*).  
 —— (*Mechanics' Institution, Bath Street*).  
 —— (*Philosophical Society*).  
 Grantham (*Public Literary Institution*).  
 Gravesend (*Gravesend and Milton Library and Reading Rooms*).  
 Greenwich (*Working Men's Institute*).  
 Guildford (*Mechanics' Institute*).  
 Haleworth (*Mechanics' Institute*).  
 Halifax (*Literary and Philosophical Society*).  
 —— (*Mechanics' Institute*).  
 —— (*Working Men's College*).  
 Haalldon (*Institute*).  
 Hastings (*Literary and Scientific Institute*).  
 Hawarden (*Literary Institution*).  
 Hebden Bridge, near Todmorden (*Mechanics' Institution*).  
 Helston (*Reading Room and Library*).  
 Hereford (*Natural History, Philosophical Antiquarian, and Literary Society*).  
 Herford (*Literary and Scientific Institution*).  
 Heywood (*Mechanics' Institute*).  
 Holbeck (*Mechanics' Institution*).  
 Hollingwood (*Working Men's Club*).  
 Holywell Green (*Mechanics' Institution*).  
 Huddersfield (*Mechanics' Institution*).  
 Hull (*Church Institute*).  
 —— (*Literary, Scientific and Mechanics' Institute*).  
 —— (*Lyceum Library*).  
 —— (*Royal Institution, Albion Street*).  
 —— (*Young People's Institute*).  
 Huntingdon (*Literary and Scientific Institution*).  
 Kendal (*Christian and Literary Institute*).  
 —— (*Working Men's Institute*).  
 Kidderminster (*Mechanics' Institute*).  
 Lancaster (*Mechanics' Institute and School of Science*).  
 Leeds (*Church Institute*).  
 —— (*Library*).  
 —— (*Mechanics' Institution and Literary Society*).  
 —— (*Philosophical and Literary Society*).  
 —— (*Working Men's Institute*).  
 —— (*Young Men's Christian Association*).  
 Leighton Buzzard (*Working Men's Mutual Improvement Society*).  
 Leith (*Mechanics' Subscription Library*).  
 Lewes (*Mechanics' Institute*).  
 —— (*School of Science and Art*).  
 Lincoln (*Mechanics' Institute*).

- Liverpool (*Institute*).  
 —— (*Mechanics' Institute*).  
 —— (*Medical Institution*).  
 —— (*Polytechnic Society*).  
 Llanelli (*Chamber of Commerce and Reading Room*).  
 London (*Athenaeum Club, Pall Mall*).  
 —— (*Beaumont Institute, Mile End*).  
 —— (*Bedford Working Men's Institute, Spitalfields*).  
 —— (*Birkbeck Institution, Southampton Buildings, Chancery Lane*).  
 —— (*Bow Common Working Men's Club, Devon's Road, Bow Common*).  
 —— (*Christchurch Working Men's Club, New Street, Lark Hall Lane, Clapham*).  
 —— (*Clerkenwell Club, Lower Roseman Street*).  
 —— (*Holloway Working Men's Club and Institute, Holloway Road*).  
 —— (*Literary and Scientific Society, Wellington Street, Islington*).  
 —— (*Literary and Scientific Institution, Walworth*).  
 —— (*St. James and Soho Working Men's Club, Rupert Street, Soho*).  
 —— (*St. Mary Charterhouse Working Men's Club, Golden Lane*).  
 —— (*South London Working Men's College, Blackfriars Road*).  
 —— (*Southwark Working Men's Club, Broadwall, Stamford Street*).  
 —— (*Spring Vale Institution, Hammersmith*).  
 —— (*Working Men's Club, Brixton Hill*).  
 —— (*Working Men's Club, St. Mark's, Victoria Docks*).  
 —— (*Working Men's Club and Institute, Battersea*).  
 —— (*Working Men's Club and Institute Union, Strand*).  
 —— (*Working Men's College, Great Ormond Street*).  
 Loughborough (*Working Men's Club and Institute*).  
 Madeley (*Anstice Memorial, Working Men's Club and Institute*).  
 Manchester (*Ancoate Branch Free Library*).  
 —— (*Athenaeum*).  
 —— (*Campfield Free Lending Library*).  
 —— (*Chorlton and Ardwick Branch Free Library*).  
 —— (*Hulme Branch Free Library*).  
 —— (*Law Library*).  
 —— (*Mechanics' Institution*).  
 —— (*Natural History Museum, Peter Street*).  
 —— (*Owen's College*).  
 —— (*Portico Library, Mosley Street*).  
 —— (*Rochdale Road Branch Free Library*).  
 —— (*Royal Exchange Library*).  
 Mansfield (*Co-operative Industrial Society*).  
 —— (*Mechanics', Artizans', and Apprentices' Library*).  
 Melksham (*Mutual Improvement Society*).  
 Merthyr-Tydfil (*South Wales Institute of Engineers*).  
 Middlesbrough (*Iron and Steel Institute*).  
 —— (*Mechanics' Institution*).  
 Mobbury (*Mechanics' Institution*).  
 Mossley (*Mechanics' Institute*).  
 Newark (*Mechanics' Institute*).  
 Newcastle-upon-Tyne (*Mechanics' Institution*).  
 —— (*Working Men's Club*).  
 New Mills, near Stockport (*Mechanics' Institute*).  
 Newport, Isle of Wight (*Young Men's Society and Reading Room*).  
 Northampton (*Mechanics' Institute*).  
 Nottingham (*Free Library*).  
 —— (*Mechanics' Institution*).  
 —— (*Subscription Library, Bromley House*).  
 Oldham (*Analytic Literary Institution*).  
 —— (*Mechanics' Institution, Werneth*).  
 Ormskirk (*Public Library*).  
 Oswestry (*Institute*).  
 Patricroft (*Mechanics' Institution*).  
 Pembroke Dock (*Mechanics' Institute*).  
 Pendleton (*Mechanics' Institution*).  
 Penry (*Working Men's Club and Reading Room*).  
 Perth (*Mechanics' Library, High Street*).  
 Peterborough (*Mechanics' Institution*).  
 Plymouth (*Working Men's Institute*).  
 Poole (*Literary and Scientific Institution*).  
 —— (*Mechanics' Institute*).  
 Portsea (*Athenaeum and Mechanics' Institution*).  
 Preston (*Avenham Institution*).  
 —— (*Society of Useful Knowledge*).  
 Rawtenstall (*Mechanics' Institution*).  
 Richmond (*Working Men's College*).  
 Rotherham (*Rotherham and Masbro' Literary and Mechanics' Institute*).  
 Royston (*Institute*).  
 Ryde, Isle of Wight (*Philosophical and Scientific Society*).  
 Saffron Walden (*Literary and Scientific Institution*).  
 St. Just (*Institution*).  
 St. Leonard's (*Mechanics' Institution*).  
 Salford (*Working Men's Club*).  
 Saltaire (*Literary Institute*).  
 Selby (*Mechanics' Institute*).  
 Sheffield (*Branch Free Library*).  
 —— (*Literary and Philosophical Society, School of Arts*).  
 Skipton, Yorkshire (*Mechanics' Institute*).

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| Southampton ( <i>Hartley Institution</i> ).<br>_____<br><i>(Polytechnic Institution)</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Tunbridge Wells ( <i>Mechanics' Institution</i> ).<br>_____<br><i>(Society of Literature and Science)</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Southport ( <i>Athenaeum</i> ).<br>South Shields ( <i>Working Men's Institute and Club</i> ).<br>Spalding ( <i>Mechanics' Institute</i> ).<br>_____<br><i>(Christian Young Men's Association)</i> .                                                                                                                                                                                                                                                                                                                                                                                     | Turton near Bolton ( <i>Chapel Town Institute</i> ).<br>Tynemouth ( <i>Free Public Library</i> ).<br>Ulverston ( <i>Temperance Hall</i> ).<br>Uttorexeter ( <i>Mechanics' Literary Institute</i> ).<br>Wakefield ( <i>Mechanics' Institute</i> ).<br>Watford ( <i>Literary Institute</i> ).<br>Wells, Somerset ( <i>Mechanics' Institution, Grove Lane</i> ).<br>_____<br><i>(Young Men's Society)</i> .                                                                                                                                                                                                                                          |
| Staines ( <i>Literary and Scientific Institution</i> ).<br>_____<br><i>(Mechanics' Institute and Reading Room)</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Whalleybridge ( <i>Mechanics' Institute</i> ).<br>Whitby ( <i>Institute</i> ).<br>_____<br><i>(Museum)</i> .<br>_____<br><i>(Subscription Library)</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Stamford ( <i>Institution</i> ).<br>Stourbridge ( <i>Church of England Association</i> ).<br>_____<br><i>(Iron Works Reading Room and Library)</i> .<br>_____<br><i>(Mechanics' Institution)</i> .<br>_____<br><i>(Working Men's Institute)</i> .                                                                                                                                                                                                                                                                                                                                       | Whitehaven ( <i>Mechanics' Institute</i> ).<br>_____<br><i>(Working Men's Reading Room)</i> .<br>Whitstable ( <i>Institute</i> ).<br>Wisebeach ( <i>Mechanics' Institute</i> ).<br>Wolverhampton ( <i>Library</i> ).<br>Wolverton ( <i>Institute</i> ).<br>Woodbridge ( <i>Literary and Mechanics' Institute</i> ).<br>_____<br><i>(Working Men's Hall)</i> .<br>Worcester ( <i>Railway Literary Institute</i> ).<br>_____<br><i>(Workman's Hall)</i> .<br>Workington ( <i>Mechanics' Institution</i> ).<br>York ( <i>Church Institute</i> ).<br>_____<br><i>(Institute of Popular Science, &amp;c.)</i> .<br>_____<br><i>(Railway Library)</i> . |
| Stratford ( <i>Working Men's Hall</i> ).<br>Sunderland ( <i>Working Men's Club</i> ).<br>Swansea ( <i>Royal Institution of South Wales</i> ).<br>_____<br><i>(Working Men's Institute)</i> .<br>Tavistock ( <i>Mechanics' Institute</i> ).<br>_____<br><i>(Public Library)</i> .<br>Thornton, near Bradford ( <i>Mechanics' Institute</i> ).<br>Thornton Heath, Croydon ( <i>Workmen's Club</i> ).<br>Todmorden ( <i>Mechanics' Institution</i> ).<br>Truro ( <i>Cornwall County Library</i> ).<br>_____<br><i>(Institution)</i> .<br>_____<br><i>(Royal Institution of Cornwall)</i> . |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

Presentations of portions of the Works, published by order of the Commissioners of Patents, have been made to the following Libraries :—

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| Armagh ( <i>Town Clerk's Office</i> ).<br>Aylesbury ( <i>Mechanics' Institution and Literary Society, Kingsbury</i> ).<br>Birmingham ( <i>Institution of Mechanical Engineers, Newhall Street</i> ).<br>Boston, Lincolnshire ( <i>Public Offices, Market Place</i> ).<br>Cambridge ( <i>Free Library, Jesus Lane</i> ).<br>Chester ( <i>Mechanics' Institute, St. John Street</i> ).<br>Coalbrookdale ( <i>Literary and Scientific Institution</i> ).<br>Coventry ( <i>Watchmakers' Association</i> ).<br>Darwen, Over ( <i>Free Public Library</i> ).<br>Dublin ( <i>Dublin Library, D'Olier Street</i> ).<br>Edinburgh ( <i>Horological Society</i> ).<br>Ennis ( <i>Public Library</i> ).<br>Gloucester ( <i>Working Men's Institute, Southgate Street</i> ).<br>Ipswich ( <i>Mechanics' Institute, Tavern Street</i> ).<br>Kew ( <i>Library of the Royal Gardens</i> ). | Kington, Herefordshire ( <i>Reading Institute</i> ).<br>Leominster ( <i>Literary Institute</i> ).<br>London ( <i>House of Lords</i> ).<br>_____<br><i>(House of Commons)</i> .<br>_____<br><i>(Hon. Soc. of Gray's Inn)</i> .<br>_____<br><i>(Hon. Soc. of Inner Temple)</i> .<br>_____<br><i>( " Lincoln's Inn)</i> .<br>_____<br><i>( " Middle Temple)</i> .<br>_____<br><i>(Aeronautical Society)</i> .<br>_____<br><i>(British Horological Institute)</i> .<br>_____<br><i>(General Post Office)</i> .<br>_____<br><i>(Institution of Civil Engineers)</i> .<br>_____<br><i>(Odontological Society)</i> .<br>_____<br><i>(Royal Society)</i> .<br>_____<br><i>(United Service Museum)</i> .<br>Manchester ( <i>Literary and Philosophical Society, George Street</i> ).<br>_____<br><i>(Mechanics' Institution, David Street)</i> . |
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Newcastle-upon-Tyne (*North of England Institute of Mining Engineers*).  
Oxford (*Bodleian Library*).  
Stratford, near Manchester (*Mechanics' Institute*).

Swindon, New (*Mechanics' Institute*).  
Tamworth (*Library and Reading Room, George Street*).  
Yarmouth, Norfolk (*Public Library, South Quay*).

#### *British Colonies and Foreign States.*

British Columbia—Mechanics' Institute, Victoria.  
Public Library, New Westminster.  
France—Academy of Science, Paris.  
Netherlands—Bibliothèque de l'Ecole Polytechnique de Delft.  
Russia—Imperial Technological Institute, St. Petersburg.  
Smyrna—Literary and Scientific Institute.  
United States—American Academy of Arts and Sciences, Boston.

United States.—American Institute, New York.  
American Society of Civil Engineers, New York.  
Industrial University, Champaign, Illinois.  
Mechanics' Institute, San Francisco.  
Odd Fellows' Library Association, San Francisco.  
Smithsonian Institute, Washington.  
Young Men's Christian Association, Scranton, Pennsylvania.

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This Museum is open to the public daily, free of charge. The hours of admission are as follows :—

Mondays, Tuesdays, and Saturdays, 10 A.M. till 10 P.M.  
Wednesdays, Thursdays, and Fridays, from 10 A.M. till 4, 5, or 6 P.M., according to the season.

If any Patentee should be desirous of exhibiting a model of his invention in London, he may avail himself of this Museum, which has been visited since its opening on the 22nd June 1857 by more than 2,150,000 persons. The model will be received either as a gift or loan ; if deposited as a loan, it will be returned on demand. Before sending a model, it is requested that the size and description of it shall first be given to the Superintendent of the Patent Office Museum.

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## NOTICE.

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The Abridgments delivered at the Patent Office by the Applicants for Letters Patent will in future be published weekly (commencing on Friday, July 14), with Indexes of Persons and Subjects. In the body of the work the Abridgments of the Provisional and Complete Specifications will be published in regular numerical order at the expiration of the term of six months from the date of application. But each weekly number will have an appendix, containing the Abridgments open to public inspection before the expiration of the term of six months, in consequence of the Patentees having filed their Final Specifications, and also the Abridgments of Complete Specifications just received. These Abridgments will be subsequently printed in the body of the work in their proper places, in order to preserve the numerical and chronological arrangement of the book. In the indexes of each successive number all the previous indexes will be incorporated until the end of the year; and then the last indexes only should be retained to bind with the fifty-two weekly parts in one volume for the year.

B. WOODCROFT.

July 10, 1871.

\* \* \* The work referred to in the above notice is published (under the title of "Chronological and Descriptive Index of Patents," &c.) on Friday in each week, and is forwarded, post free, to subscribers. Terms 22s. per annum. Subscriptions received at the Sale Room of the Patent Office, 25, Southampton Buildings, Holborn, where also single copies, at 4d. each, may be obtained. Post Office Orders to be made payable at the Post Office, Holborn, to Mr. Bennet Woodcroft, Clerk to the Commissioners of Patents.

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